Resilience Context Analysis

Resilience to shocks that impact food security and nutrition in South Sudan

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Acronyms

CAMP	South Sudan Comprehensive Agricultural Master Plan
CPA	Comprehensive Peace Agreement
CPP	Country Programming Paper
CSI	Coping Strategy Index
DFID	Department for International Development (UK)
DRR	Disaster Risk Reduction
ECHO	European Commission for Humanitarian Aid and Civil Protection
EWS	Early Warning System
FAO	United Nations Food and Agriculture Organisation
FCS	Food Consumption Score
FEWSNET	Famine Early Warning System Network
FSL	Food Security and Livelihoods
FSNA	Food and Security Nutrition Assessment
FSMS	Food Security Monitoring System
FSNMS	Food Security and Nutrition Monitoring System
GAM	Global Acute Malnutrition
GDP	Gross Domestic Product
IDP	Internally Displaced Person
IGAD	Intergovernmental Authority on Development
IDDRSI	IGAD Drought and Disaster Resilience Initiative
ISRS	Income Source Reliability and Sustainability
IPC	Integrated Food Security Phase Classification
MAFCRD	South Sudan Ministry of Agriculture, Forestry, Cooperatives and Rural Development
MUAC	Mid Upper Arm Circumference
NBS	South Sudan National Bureau of Statistics
NDVI	Normalized Difference Vegetation Index
ODI	Overseas Development Institute
OCHA	United Nations Office for Coordination of Humanitarian Affairs
POC	Protection of Civilians
RCA	Resilience Context Analysis
RPLRP	Regional Pastoral Livelihood Resilience Project
SGBV	Sexual and Gender Based Violence
SPLA	Sudan People's Liberation Army
SSCCE	Southern Sudan Centre for Census, Statistics and Evaluation
SSDP	South Sudan Development Plan
SSP	South Sudanese Pound
UNICEF	United Nations Children's Fund
UNDP	United Nations Development Programme
UNDSS	United Nations Department for Safety and Security
UNEP	United Nations Environmental Programme
USAID	United States Agency for International Development
WASH	Water, Sanitation and Hygiene
WHO	United Nations World Health Organisation
WFP	United Nations World Food Programme

Executive Summary

UN and development partners, in collaboration with representatives of various national ministries, prepared this context analysis to better understand resilience to shocks that impact food insecurity and malnutrition in South Sudan. The analysis intends to support efforts by the Ministry of Agriculture, Forestry, Cooperatives and Rural Development (MAFCRD) to develop a framework for evidence-based resilience programming in South Sudan.

The study was undertaken between April and October 2015 by a technical team using multiple data sources, both quantitative and qualitative, which were complemented by inputs from government and partners. After an overall conceptual framework and methodology was adopted, an overview was prepared of the socioeconomic context of South Sudan, including the main livelihood systems and relevant political events, including the conflict that began in December 2013.

Key recent shocks and stressors affecting households and communities in the country were analysed, and trends in food insecurity and malnutrition examined against them. Using quantitative data from seasonal rounds of the Food Security and Nutrition Monitoring System (FSNMS, previously FSMS)[1] since 2010, and other surveys including the National Baseline Households Survey (NHBS), households were classified as 'resilient' based on the following criteria: 1) food secure according to food consumption indicators and coping capacity; 2) no malnourished children according to anthropometric data[2]; and 3) non-receivers of food assistance for three months before the survey. Analysis was then carried out to identify a range of 'resilience capacities' – absorptive, adaptive and transformative – which distinguished non-resilient from resilient households. This was done using long-term household data (FSNMS/FSMS and others) as well as a literature review and partner inputs. Where quantitative data was available, significance tests (t-tests and chi-square) were run to establish whether differences between the resilient and non-resilient households were significant.

Key findings from this resilience context analysis are:

SHOCKS AND STRESSORS

Overall, South Sudan is highly shock-prone. The range of different shocks correlate with those of the wider region, yet indicate a country with unique socio-cultural, political, economic and ecological characteristics. Key shocks identified, all sudden onset and with negative impacts on food and nutrition security as well as general wellbeing, include:

- **High food prices and other economic shocks** linked to insufficient internal production of staple food items and a fragile, oil-dominated economy. These are the most common shocks perceived across the country and particularly in the Greater Bahr el Ghazal and the Greater Upper Nile states.

1 For more information about the FSNMS check http://vam.wfp.org/CountryPage_assessments.aspx?iso3=SSD

2 Global Acute Malnutrition (GAM) was assessed using anthropometric data. Children's middle upper arm circumference (MUAC) was used until October 2013, and stunting, wasting and underweight data (from weight, height and age values) was used from the 2014 FSNMS rounds onwards.

- **Insecurity and violence** including the recent conflict (as yet unresolved), local conflicts or disputes over resources, or violence by armed youths, which is worsened by a relative lack of governance or accountability. Although these types of shocks and stressors are common to all states, their frequency and severity since 2011 has been higher in Greater Bahr el Ghazal and Greater Upper Nile states.
- **Hydro-meteorological shocks** such as acute drought or flood episodes, particularly the latter where seasonal rains make already weak infrastructure impassable. Over the reference period (2011-2015) drought was more frequent in the Greater Bahr el Ghazal and Greater Equatoria states (particularly Eastern Equatoria), whereas Greater Upper Nile states were more exposed to flooding.
- **Human, animal or crop disease outbreaks**, worsened by relatively limited protection in terms of vaccination coverage, knowledge or early warning about anticipated disease threats etc. In the period after 2011, the greatest number of human and crop disease outbreaks was observed in Western Equatoria, Western Bahr el Ghazal, Northern Bahr el Ghazal and Unity states; while Eastern Equatoria, Warrap, and Unity states registered the highest level of animal diseases affecting households.

All the shocks are consistent with a country whose fragile economy is dominated by oil revenues, and whose population is relatively market dependent and vulnerable to a relative lack of social or productive services.

Stressors listed in this analysis are many, including chronic and acute ones that worsen the impact of shocks and deepen existing vulnerability (as expressed in poverty, malnutrition and other socioeconomic indicators). As with the shocks listed, most are worse in Greater Upper Nile and Greater Bahr el Ghazal states. Across the country, key stressors identified include:

- **Endemic disease and morbidity** linked to poor coverage of health and sanitation services and worsened (in the case of communicable diseases including cholera, measles and diarrhoea) due to congestion linked to rising urbanisation and high levels of post-conflict displacement.
- **Pressures felt by families and communities hosting displaced persons** as a result of conflict, and often forced to stretch already meagre resources.
- **Limited basic infrastructure** including roads and access to services. Many of these indicators were the lowest in the world before the recent conflict. They have only worsened since.
- **Limited access to quality education**, reflected in very poor literacy and other education outcomes (typically worse for girls), further disrupted by the recent conflict.
- **Poor access to water and sanitation** exacerbating disease threats and low productivity.
- **Lack of social welfare or protection** (with the exception of food assistance) that allows poverty to become more entrenched or for cycles of vulnerability to be perpetuated.

- **Sexual and Gender Based Violence** (SGBV) at alarming levels even if under-reported.
- **Risks to children** including SGBV, early marriage, child labour, recruitment into armed groups, psychosocial and physical pressures linked to displacement, and non-access to basic services including education (made worse by insecurity).
- **Social or cultural events** such as weddings that require significant contributions of household assets including food, livestock, cash – a commonly reported stressor in FSNMS.
- **Low productive capacity and technology**, across livelihoods and sectors, that means producers cannot avoid or withstand shocks or maximise investments and opportunities.
- **Youth unemployment and alienation** stemming from lack of viable livelihood opportunities (over half of young people are unemployed due to their lack of relevant skills, changes to traditional livelihoods, and the labour market's inability to absorb them) as well as life-long exposure to insecurity, tensions with older generations and traditional authorities, and relatively little engagement in civil society or constructive community peace mechanisms.
- **Limited employment opportunities** due to poor economic development in general. This is a problem in both urban and rural areas, reflected in limited livelihood diversification and high unemployment rates. Exacerbating factors include limited access to credit for businesses, a relative disempowerment of women in the economy, and the poor regulatory or investment environment which undermines markets and entrepreneurship. This stressor is also underpinned by the low education levels of those seeking employment; and, in urban areas, competition from better educated foreign labour force.

These stressors demonstrate how the world's newest country, already struggling with poor socioeconomic indicators and the challenges of building a modern state, is in danger not only of losing development gains made so far but also of deepening existing vulnerabilities because of displacement, destruction and loss of assets linked to the recent conflict.

MALNUTRITION AND FOOD INSECURITY

In this analysis, households' food security and children's nutrition status were the two wellbeing outcomes that served as 'proxy indicators' for resilience at household level. Food insecurity and malnutrition are chronic problems with seasonal highs in South Sudan, and the conflict has had a negative impact on both. The favourable outcomes from good harvests in 2013 were lost in 2014, when an early onset of the lean season was observed following limited crop planting in conflict-affected areas. Overall availability, accessibility and utilisation of food dropped across the country. Previously food sufficient regions registered an increased proportion of their food insecure population, with implications on the short-term wellbeing and longer term development. Economic access to food suffered from reduced household incomes and by the downturns in the economy resulting from decreasing oil revenues as a result of reduced global oil prices (particularly in urban areas), which started before the onset of the conflict. In conflict-affected states, high levels of market dependency associated with food price increases

exposed over half of the population to moderate to severe food insecurity, partly alleviated by humanitarian food assistance in most areas. Currently, the cereal deficit for South Sudan is approximately 250,000 tonnes and only Western Equatoria is notable for consistently producing food surpluses. While the magnitude of the deficit varies significantly across the states and counties, an increasing gap between internal requirements and food availability was observed since the beginning 2014 in the rest of the country. In the Greater Upper Nile region, the deficit for 2015 has increased by almost 50 percent from 2014.

According to the April 2015 Integrated Food Security Phase Classification (IPC) analysis, South Sudan's levels of acute malnutrition were above the WHO 'emergency' threshold. 'Critical' levels were registered in about 80 percent of counties in conflict-affected and high burden states (Greater Upper Nile, Warrap and Northern Bahr el Ghazal), ones which make up a sizeable proportion of the country[3]. Malnutrition has persistently remained high as a result of limited access to food but also due to poor child care and feeding practices and poor health and sanitation facilities. There has however been an improvement in the food security situation in the Protection of Civilians (POC) sites and conflict-affected areas receiving assistance[4].

RESILIENCE CAPACITIES

Shocks have an impact on the food security of a household and the nutrition of its children. This analysis identified those capacities which distinguish households that are resilient to the impact of shocks on food and nutrition security from those which are not. The capacities are divided into three categories:

1. Absorptive capacities

- **Food-related coping strategies:** Non-resilient households had significantly higher Coping Strategies Index (CSI) scores, indicating they were adopting a larger number of food-related ways of coping that ultimately were not effective in improving their food security and nutrition status.
- **Livestock ownership:** Resilient households had statistically more livestock and livestock-related income sources, indicating that the pastoral economy, still a mainstay of production and society in much of the country, provides means for households to withstand shocks.
- **Expenditure:** Less resilient households tended to have a lower total expenditure and to spend a higher proportion of their total expenditure on food, referencing the market dependency that makes many vulnerable to economic, political or natural shocks.
- **Psychosocial strength:** While quantitative data was not available, qualitative data showed that psychosocial wellbeing including aspirations and positive attitudes were understood to be important for resilient households, and these were affected by the long-running insecurity and displacement.

3 IPC classifications are based on a combination of nutrition and mortality indicators. The range (positive to negative) is Acceptable-Alert-Serious-Critical-Very Critical. Description of the thresholds for each classification can be found at: http://www.fao.org/docrep/010/i0275e/i0275e.pdf

4 Integrated Food Security Phase Classification (IPC) report on South Sudan, October 2014

- **Savings and informal safety nets:** Qualitative data asserts that networks of reciprocal assistance between people and groups, in areas where there are higher levels of social cohesion at the community level, determine a household's ability to absorb a shock, especially given the limits of both government and external safety nets.

- **Conflict management and justice systems:** Despite no quantitative data on this, a range of inputs highlighted the importance of conflict resolution and justice in transforming chronic vulnerability and enabling development gains for those affected by insecurity and conflict.

2. Adaptive capacities

- **Livelihood risk diversification**: Non-resilient households were engaged in a less diverse set of livelihoods to a significant degree. Resilient households had a range of alternatives that included different crops and livestock types, enabling them to cope with shocks and maintain their food and nutrition security.

- **Improved access to productive and fertile land:** Resilient rural households had more access to land to produce their own food, and management of natural resources appeared effective in promoting longer-term resilience to natural shocks and stressors, as well as in mitigating local disputes or conflict over natural resources such as pasture and water.

- **Income Source Reliability and Sustainability (ISRS):** Non-resilient households are typically much more engaged in activities that compromise long-term and wider-level resilience. Their activities tend to be unreliable, deplete the natural resource base, or compromise human and social capital. These activities include sale of firewood, charcoal and grass, begging, borrowing and sale of food aid. Women in rural areas are often forced to depend on these.

- **Salaried or skilled labour:** Resilient households were almost twice likely to be involved in skilled and salaried labour than non-resilient ones. This includes urban jobs (public or informal sector) not subject to climatic or natural shocks.

- **Seasonal migration**: There was a lack of quantitative data, but this refers mainly to rural-urban migration during March to May (especially by men) for work to supplement household income from shock-prone traditional sources. Remittances from relatives abroad were another strand of this, acting as a form of safety net.

- **Educated household head**: Quality and relevant education can decrease the risk of unemployment and be a source of productivity, life skills (especially for mothers) and connections that may support a household to overcome stressors and withstand shocks.

- **Early Warning Systems (EWS)**: There was a lack of quantitative data on EWSs, which provide information on shocks as well as services and assistance and are therefore a feature of improved resilience. This is particularly important in light of the non-cyclical or unpredictable nature of many of the key shocks affecting South Sudan.

3. Transformative capacities

- **Access to markets and infrastructure:** Access to markets and infrastructure correlated geographically with resilience. For example, households in Jonglei state have the longest average travel time to reach a market (made worse by the recent conflict and affected by seasonal rains) and showed very low levels of resilience in this analysis.

- **Access to quality and relevant education:** Education allows people to better withstand shocks by equipping them with valuable economic and social responses to them. Educated persons have better access to the salaried economy of Juba and other towns. They also tend to have stronger life skills and aspirations and often wider social networks and connections. Educated women are also less likely to marry early than uneducated ones.

- **Land tenure security:** Being able to consistently access and use land regardless of shocks is a key resilience capacity supported by robust land tenure policy and regulations. Although access to land is not a major constraint in most of the country, including in the main cropping areas, land tenure security remains relevant as it reduces the likelihood of land disputes, particularly in areas with conflict-displaced returnees or internally displaced people (IDPs), and has a positive impact on the sustainability of livelihoods and food security.

- **Access to water and sanitation:** Safe water for domestic and household use determines exposure to sickness and malnutrition. This is a vital component of resilience given the country's chronic disease and malnutrition levels.

- **Access to health services:** Accessing health services is vital in combating sickness or disease outbreaks, and for preventive services and health education. States with better nutrition and food security levels generally had more medical personnel and a higher number of facilities per capita (and vice versa: e.g. Warrap, with the worst food insecurity and malnutrition, had the least number of nurses, doctors, midwives and health facilities per capita.)

- **Access to credit and formal safety nets or social protection:** Lack of access to credit is often cited as a major economic constraint in South Sudan. Investments in social safety nets over the long term are essential to alleviate or prevent deepening poverty, and to protect and enhance human capital and access to services. This enables households to plan, adapt and develop despite exposure to shocks and stressors.

- **Youth employment and empowerment:** Youth (defined as those under 30 years) make up 70 percent of the population and play a central role in economic activities, security and social cohesion. Less than half of those aged 15-24 years are employed[5] (even less in rural areas), making them potentially more likely to be involved in conflict, crime and raiding. Youth alienation from traditional authorities is also cited as a stress. Productively empowering youths may keep households and communities together in times of shocks.

5 World Bank 2014c

- **Women's empowerment, attitudes and aspirations:** Qualitative information confirms that enabling women to play a pivotal role in households and society affects family and community responses to a shock. Granting them equitable economic and social opportunities improves efforts to transform livelihoods to better withstand those shocks. This is influenced by education levels and socio-cultural expectations (which are typically lower for women than men), as well as by trauma and psychosocial issues related to conflict or violence.

- **Community networks:** Qualitative data was used to identify the importance of local groups or associations that act as safety nets, for example through sharing or lending of food, livestock and cash. These tend to be more pronounced in rural areas and in areas with less conflict-related displacement. Such networks emphasise the importance of social cohesion for increasing community or society-based resilience against pressures for violent conflict. Their role in resilience is vital not only given the country's fragility in terms of natural and man-made shocks, but also given the limits of government or externally provided social safety nets as well as conflict prevention and resolution mechanisms.

POLICIES AND PROGRAMMES

Since its independence in 2011, many policies and programmes have been focused on sustainable development while maintaining humanitarian responsiveness. Momentum around sustainable development and resilience was largely lost with the outbreak of conflict in December 2013 and the overwhelming (and ongoing) humanitarian needs it presented. This was particularly

EXISTING NATIONAL POLICIES

- **The South Sudan Development Plan (SSDP),** covering 2011 to 2016 and aligned with a broader 'Vision 2040'; and individual ministries' programmes and policies relating to the SSDP and Vision 2040
- **The Comprehensive Agricultural Master Plan (CAMP)** of the MAFCRD
- **The National Social Protection Policy Framework** of the Ministry of Gender, Child, Social Welfare
- **The South Sudan Youth Development Policy** of the Minister of Culture, Youth and Sports
- **The National Environmental Policy** of the Ministry of Environment
- **The Disaster Risk Management Policy** of the Ministry of Humanitarian Affairs and Disaster Management
- **The South Sudan IGAD Drought Disaster Resilience and Sustainability Initiative (IDDRSI) Country Programme Paper (CPP)**
- **The UN Development Assistance Framework (UNDAF)** for the period 2014 to 2016; and the contribution of individual UN agencies
- **The General Education Act 2012**, guided by the Millennium Development Goals, which pledges universal access to education as a right for both boys and girls
- **The General Education Strategic Plan 2012-17,** which aims to increase enrolment, enhance infrastructure, reduce dropouts, achieve gender equality, provide access for special needs children, ensure access for children in emergencies, and improve the quality of education in general
- **An Education Policy Framework** (currently being drafted)

so in the three states directly affected by the conflict, as well as the neighbouring indirectly affected states. This analysis represents one of the renewed efforts to bring together a common resilience agenda linking development and humanitarian work, one led by the Government of South Sudan's commitment to building resilience through partnerships, and based on evidence.

In addition to government efforts, the policies and programming of individual agencies have been supporting links between the current humanitarian interventions and longer-term development. However, it was highlighted in a workshop to review this Resilience Context Analysis that efforts risk working in silos, and a gap exists in terms of effective coordination mechanisms. These are essential for partnerships, programming synergies, non-duplication of efforts and general coherence of interventions, both humanitarian and development.

In addition to the UNDAF framework, examples of coordination platforms in the country with value for a common resilience agenda (and currently gaining traction) include: the Social Protection Technical Working Group; the Disaster Risk Management Working Group; and various Steering Committees and Technical Management Committees at the state level providing strategic direction, coordination and oversight of livelihood interventions implemented. Recommendations for more effective coordination were made at the review workshop and are summarised as follows:

- **Wider and more consistent participation of both development and humanitarian partners** in national level platforms and coordination mechanisms, refocusing on more practical coordination based on decision making; and
- **Broader platforms for state coordination** to support operations closer to the ground with a range of partners implementing resilience-oriented activities in different sectors.

Strengthening and broadening of these platforms is central to a multi-agency Common Action Plan linked to existing policies and endorsed by all relevant stakeholders. This shall support different key capacities through targeted joint interventions and programmes. A jointly developed Monitoring and Evaluation (M&E) system per sector would provide key data to inform further analysis and adjustments for effective programming.

RECOMMENDATIONS

The RCA stands as an opportunity for rolling out a holistic multi-agency approach to resilience. A fruitful dynamic of partnership has already started to bear fruits in terms of joint policy and programmes planning on resilience in South Sudan. The partnership dynamic mirrors the urge to shape policies at a two-tier level including country and state level. This requires the existence of a strong coordination mechanism with the following objectives and mandate at national and state levels.

The RCA findings provide grounds for the formulation of a 'dual track' resilience agenda that caters to immediate humanitarian needs while balancing this with a longer-term development approach to reducing vulnerabilities and strengthening capacities including livelihoods support, social services and social protection. During the consultations held around the RCA in Juba, it was agreed that, given the breadth of resilience approaches and capacities essential

ROLES OF THE RESILIENCE COORDINATION MECHANISMS IN SOUTH SUDAN

- **At the country level:**
  - Facilitate a fruitful dialogue among stakeholders and enhance the resilience agenda vis-à-vis the government and donors;
  - Coordinate the design and implementation of resilience programming in a harmonised, efficient and effective way that ensures adequate multi-sectoral and geographical coverage; and
  - Ensure that the indicators of capacities identified as distinguishing resilient and non-resilient households are integrated and systematically monitored within existing multi-sectoral surveys.
- **At the state level:**
  - Ensure an effective and efficient coordination of ongoing programmes in different sectors through converging platforms or mechanisms;
  - Leverage ongoing interventions to build systems for safety nets and social protection over the medium and long-term;
  - Ensure sectoral and geographical coverage of resilience programmes; and
  - Set priority areas (both sectoral and geographical) for specific resilience initiatives

to strengthening resilience in South Sudan and the depth of needs and vulnerabilities across all states, prioritisation and sequencing is essential. Alongside agreement on the capacities identified, the following priorities were agreed upon:

1. Government's ownership of the process is crucial to ensure effectiveness and sustainability of the resilience building agenda.
2. Interagency synergies emerged as fundamental to be built upon.
3. Partnerships are key in the resilience agenda, through improvements to coordination and alignment, both at national and state level.
4. The learning agenda on resilience building in South Sudan remains essential and should be maintained and nurtured.

Building on these principles, all actors within the RCA country team committed to build a multi-agency *Common Action Plan* based on and supporting existing government policies. The Common Action Plan shall mirror the key findings of the RCA to transform vulnerability into resilience for at-risk households, and to strengthen capacities for households already on the resilience pathway. This plan will streamline joint interventions aimed at strengthening resilience-relevant capacities in key sectors while defining clear roles and mandates of each actor, a calendar and geographical scope of interventions. Key information for the plan are provided in Table 4 in the final recommendation.

Notwithstanding the need for such a plan to be produced, the RCA is already used as a technical platform for multi-agency, multi-sectoral and multi-dimensional planning on resilience in South Sudan.

Photo: © WFP/Giulio D'adamo.

Chapter 1: Background

For humanitarian and development actors alike, South Sudan poses chronic vulnerabilities alongside acute insecurity or conflict, economic volatility, and lack of access to services, infrastructure and food. While the concept of resilience has much momentum across East Africa and beyond, it has particularly keen resonance in the country. At the end of 2013 the world's newest nation was already facing daunting state-building challenges against the backdrop of a long legacy of civil war, when renewed and severe conflict broke out. Certain states, particularly in the Greater Upper Nile, were affected more than others and the pace of rebuilding and recovery (including attempts to regain prior development momentum) remains varied. In this situation, the call for a wider resilience agenda to 'bridge the humanitarian and development divide' is very relevant. Like many partner agencies, donors and the Government itself, this analysis is part of ongoing efforts to understand and strengthen the resilience of the most vulnerable households, such that underlying stressors and the impacts of repeated shocks can be minimised.

Building resilience in South Sudan requires a multi-sectoral approach and long-term commitment to flexible programming for reducing risks and strengthening capacities. It also requires convergence of key stakeholders under a common resilience building agenda. Based on this, the MAFCRD of the Government of South Sudan is leading a country team to develop a framework based on which an evidence-based resilience approach to programming can be integrated in a more cohesive, systematic and strategic manner. The team is comprised of the National Bureau of Statistics (NBS), the Ministry of Health (MoH), the Ministry of Humanitarian Affairs and Disaster Management (MoHADM), United Nations (UN) agencies[6], international financial institutions (World Bank) and related international institutions (i.e. FEWSNET). To support the design of multi-sectoral resilience programmes, it was agreed to carry out a Resilience Context Analysis (RCA – Box 1) by all interested and relevant stakeholders. The objectives of the RCA include the following:

- Analyse the impacts of contextual shocks and stressors on agreed wellbeing outcomes;
- Identify capacities relevant for resilience;
- Inform programmes and policies that could contribute to strengthened resilience; and
- Provide direction for monitoring and evaluation of resilience-strengthening programming.

BOX 1. WHAT IS A RESILIENCE CONTEXT ANALYSIS (RCA)?

RCA is a study that aims to provide understanding of resilience in a given context through analysis of available quantitative and qualitative data. It also identifies gaps in available data related to resilience in a given context. Overall, it is an effort by a multi-disciplinary and inter-agency team to support national and regional policy and programming on resilience, and to contribute to the development of resilience analysis methodologies.

RCA may serve as an entry point for further in-depth study of resilience. It is a flexible approach – adaptable according to context, available data, and objectives. Further, it aims to provide guidance, capacity building and a basis for national or local level resilience analysis.

6 Food and Agriculture Organisation (FAO), United Nations Childrens Fund (UNICEF), United Nations Development Programme (UNDP), United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA), UN Women, World Food Programme (WFP), World Health Organisation (WHO)

Photo: © WFP/Challiss-McDonough

Chapter 2: Conceptual Framework

2.1 RESILIENCE DEFINITION

While many definitions of resilience exist, there is much commonality among those applied by humanitarian and development actors[7]. This analysis interprets resilience as the capacity to absorb, to adapt and to transform in the face of shocks and stressors. For the purpose of this RCA, resilience is viewed in terms of shocks and stressors contributing to food insecurity and malnutrition outcomes.

2.2 PRINCIPLES

Some key principles have been developed for this RCA. A full list of these is presented in Annex 3, and a brief summary is as follows:

- Resilience needs to be measured in relation to a given outcome.
- Resilience needs to be related to shocks and stressors.
- Resilience can be understood as a set of capacities: absorptive, adaptive and transformative.
- Resilience can be measured at different levels, including individual, household, community, institutions/systems (e.g. a health system), sub-national, national and regional levels.
- Resilience is best understood through the integration of qualitative and quantitative methods, considering objective and subjective measures.
- Resilience must be understood over a significant time frame, with longitudinal data revealing how stressors, capacities and responses interact – and affect sustained wellbeing outcomes – over time and over shocks.
- A resilience analysis useful to implementing agencies must reference current programmes and policies, to guide suggestions on improving these.

2.3 CONCEPTUAL FRAMEWORK

Since resilience is not directly observable, it is typically measured indirectly through proxy indicators. An analytical framework to explain how these indicators capture resilience is provided in Figure 1. This framework was adapted from an existing model[8] to illustrate the

7 See for example the definition of resilience applied by the Food Security Information Network (FSIN) at: http://www.fsincop.net/topics/resilience-measurement/en/http://www.fsincop.net/topics/resilience-measurement/en/http://www.fsincop.net/topics/resilience-measurement/en

8 2014 model by Frankenberger and Costas, RM TWG (FSIN Technical Series No. 2 'A Proposed Common Analytical Model for Resilience Measurement: A General Causal Structure and Some Methodological Options'). Available at: http://www.fsincop.net/resource-centre/detail/en/c/267086/ http://www.fsincop.net/resource-centre/detail/en/c/267086/

following key elements of resilience measurement: use of qualitative and quantitative as well as subjective and objective data; consideration of initial states and capacities (at multiple scales from households to systems); subsequent states and capacities post shocks and stressors; and attention to the context in which the analysis takes place.

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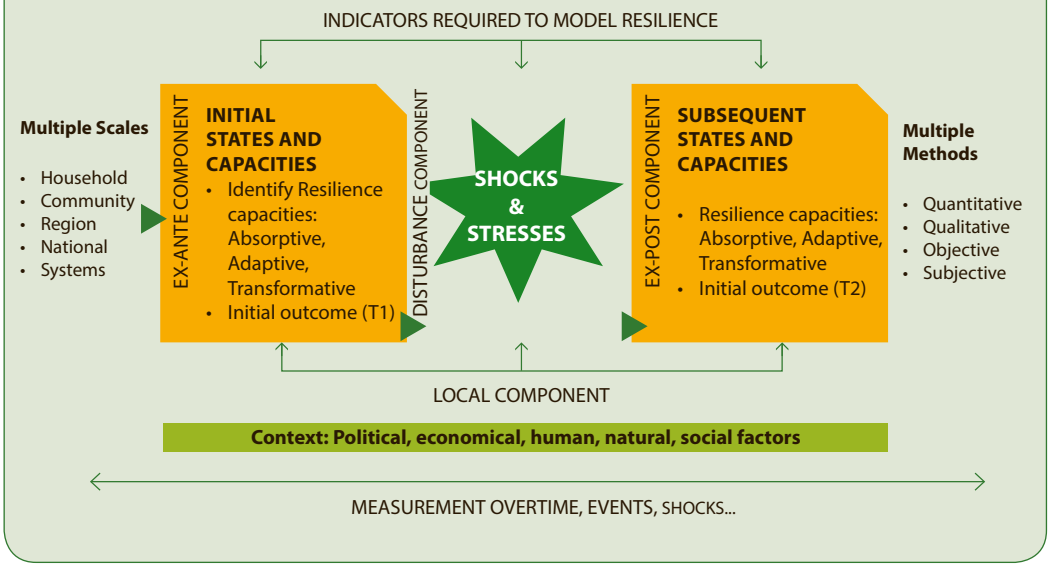
Figure 1: Resilience Framework adapted for use in this RCA



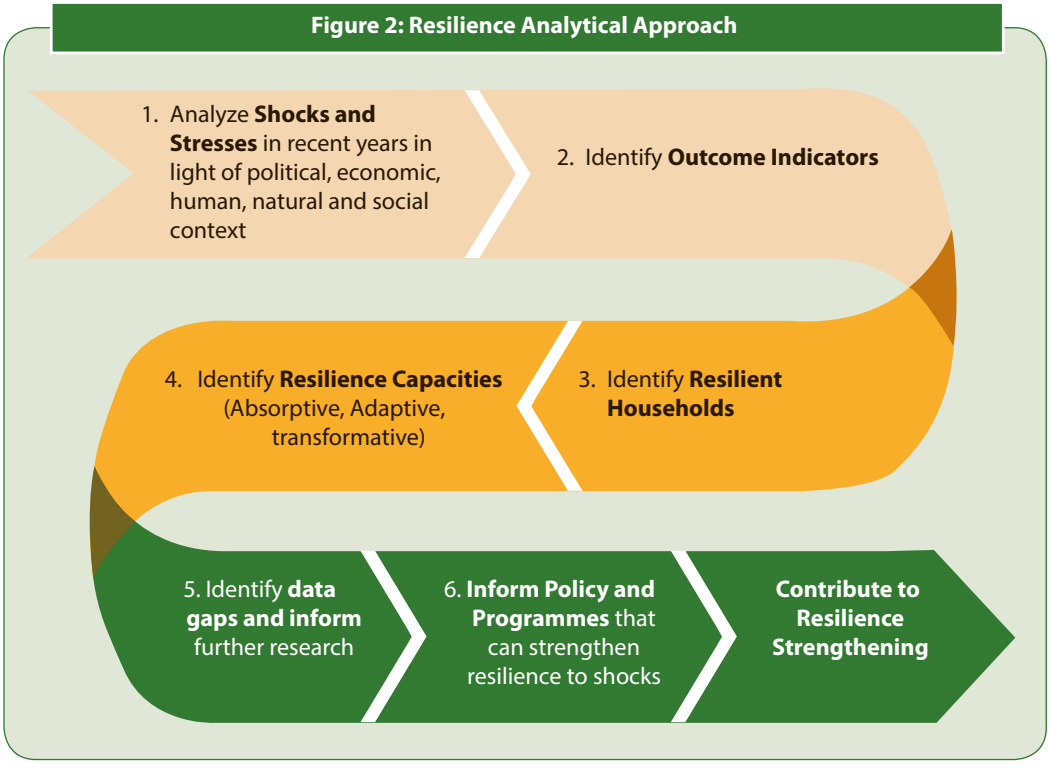
Chapter 3: Methodology

This analysis involved a wide range of agencies and stakeholders. It began with a literature review, an analysis of secondary data, and consultations with agencies and stakeholders both remotely and face to face. A technical consultation workshop was also held in Juba to collectively review and enrich a first draft of the report. This workshop was attended by representatives of the national government, partner development agencies and those who represented various community experiences and perspectives. After incorporating inputs from the workshop, the draft report was circulated for two rounds of comments and then finalised.

3.1 ANALYTICAL APPROACH

Based on the resilience framework adapted for this RCA, a step-by-step analytical approach was developed to guide the work. It shows how the available data was used in a five-part resilience analysis, with follow-up steps for contributing to resilience strengthening through improved and informed programming. The approach is summarised in Figure 2:

Figure 2: Resilience Analytical Approach



The steps of this study's analytical approach, in more detail, are as follows:

1. **Analyse shocks and stressors in recent years**: Key shocks and stressors are described and analysed as the essential first step of RCA. The main shocks that affect outcomes in the context, and against which resilience is tested, include climate-related ones (flooding, drought), unstable markets and price rises, disease outbreaks, and conflict and displacement. Stressors include cumulative impacts that undermine livelihoods, food security and general wellbeing, making communities more vulnerable to the effects of shocks and less able to recover. Detailed analysis of shocks and stressors is elaborated in Chapter 5.

2. **Agree on outcome indicators and analyse their trends in recent years**: An RCA identifies outcomes that are proxies for wellbeing and, if sustained despite shocks, signify resilience. In this RCA food insecurity and malnutrition were selected as outcomes, based on available data and on the convergence of interests of involved agencies. To be consistent with ongoing analysis in country, food consumption scores, coping capacities and levels of food expenditure were used to create a composite index as a proxy indicator of food security, while global acute malnutrition (GAM) was selected as a proxy for child malnutrition. Detailed trend analysis of these key outcomes, along with other relevant indicators, is described in Chapter 6.

3. **Identify resilient households that are able to sustain wellbeing outcomes throughout the analysis period:** In this analysis, resilient households were defined as the ones that, despite shocks and stressors, were: 1) food secure; and 2) did not have any malnourished children; and 3) did not receive food assistance in the three months prior to the survey. More information on resilient households is included in Chapter 7.

4. **Identify key capacities that distinguish resilient households**: Using long term household data and a literature review, a list of capacities was identified for the seven states not directly affected by the recent conflict: the Greater Bahr el Ghazal and Greater Equatoria regions. Conflict-affected Greater Upper Nile states were excluded from this analysis due to lack of data (see Methodology section). Capacities are divided into three categories: absorptive, adaptive and transformative. A second step using quantitative data analysis generated the set of capacities that distinguished non-resilient from resilient households, which was then validated by qualitative inputs from workshops held in Juba in June and September 2015. More information on the methodology used to identify resilience-relevant capacities is included in Chapter 7.

5. **Identify data gaps and inform further research:** The steps above helped identify information gaps that could be filled through existing and/or adapted future surveys, which would greatly contribute to better understanding resilience to food insecurity and malnutrition in South Sudan.

6. **Inform policies and programmes that can strengthen resilience to shocks and stressors:** Through identification of capacities that strengthen resilience – and of shocks and stressors that undermine it – this analysis has generated implications for policy and programming which seeks to strengthen the resilience of vulnerable households. This

section was heavily informed by a consultative workshop that brought together members of the government, development partners and non-governmental organisations to consider policy and programming implications based on the report and their direct experience. More information is included in Chapter 8 and Chapter 9.

3.2 DATA SOURCES

Different steps of the RCA used different sources of data, both quantitative and qualitative. While the qualitative data sources used are listed in the bibliography, the main sources of the quantitative analysis include:

a) **The Food Security and Nutrition Monitoring System (FSNMS/FSMS)**[9]: This is a collaborative effort providing seasonal food security and nutrition analysis at national and state levels. It involves over 35 organisations from Government, UN, non-governmental organisations (NGOs) and community-based organisations (CBOs)[10].

The FSNMS was initiated in 2010. By June 2015, 15 rounds of data collection had been completed, the most recent in March 2015. Since 2010, three rounds a year were conducted, taking into consideration seasonality factors affecting food and nutrition security. These are: 1) October, right after or at harvest time; 2) June, which is the peak of the lean season; and 3) February, mid-way between the harvest and peak lean seasons. The present analysis uses data from the 14 FSNMS rounds conducted between October 2010 and February 2015, while the 15th round (June 2015) was not considered as it was released after the RCA analysis.

Each FSNMS covered all ten states and has a sample size which is statistically representative of the population at state and country level. The average sample size of each FSNMS round is 2,662 households, the lowest being 1,841 and the highest 3,919 households. Data was collected from at least 25 randomly selected clusters (sites) per state, based on probability proportional to size (PPS) and factoring in population movements in the case of Greater Upper Nile states. At least 14 randomly selected households were surveyed in each site. In addition, at least one community or key informant interview was conducted at each selected cluster to provide information for triangulation with the household survey data.

The high number of consecutive FSNMS rounds provided a solid base to distinguish the effects of seasonality from shocks. Data collection was carried out through 2014, in spite of the conflict and insecurity. In the Greater Upper Nile region, where the conflict was mostly concentrated, the February FSNMS round was replaced by an Emergency Food Security Assessment (EFSA) that provided a similar quantity and range of data for analysis. Child malnutrition was measured through middle upper arm circumference (MUAC) data until December 2013, and anthropometric indicators (height and weight) thereafter.

9 For more information about FSNMS check http://vam.wfp.org/CountryPage_assessments.aspx?iso3=SSD. It is important to note that the change from FSMS to FSNMS took place in 2014 when UNICEF became a key partner in the exercise with resultant inclusion of wash and health measurements. Therefore, FSMS and FSNMS do not register any major difference except on the timing.

10 Partners in the FSNMS are: MOEST, NBS, SMoAF, SMoH, SSGID, SSMDP, SSRRA, SSRRC, FAO, OCHA, UNHCR, UNICEF, WFP, AAH, ACF, ADRA, ATITA, CARE, caritas Suez, CDOT, CDTY, CRS, Don Bosco, FACDDO, FADA, FEWSNET, GAA, GOAL, HeRRY, IRC, JAM, LDA, MEDAIR, NCDA, Nile Hope, NPA, OFAD, PIN, Plan International, RI, SALF, Save the Children, SCC, SMAFC&RD, SMAR, SMARF, SOME, SP, UCDC, UNKEA, VSF-SUISE, World Concern, WVI.

b) **National Baseline Households Survey (NHBS) 2009:** The NBS conducted the NBHS during April and May 2009 to assess the living standards of the population.

The survey sample was based on a stratified two-stage sampling design and on an overall sample from the 2008 Population and Housing Census. The primary sampling units (PSUs) were enumeration areas (EAs) identified on maps, with an average of 184 households in urban EAs and 136 households in rural EAs. A sample of 44 EAs was selected at the first sampling stage for each of the ten states in the country, and 12 households were selected from the listing for each sample EA at the second stage. Therefore the total sample size was 528 households per state, or 5,280 households for the country. Given that only 15.2 percent of households in South Sudan were classified as urban, a higher first-stage sampling rate was used for the urban stratum of each state, to improve the precision of urban estimates at the national level.

The questionnaire for the survey was designed in consultation with data users including representatives from various government ministries, UN agencies and NGOs. Although the primary aim of the survey was to generate estimates of poverty incidence, it was agreed that baseline information could be collected on a range of other indicators. The survey covered health, education, labour, housing, asset ownership, access to credit, economic shocks, and transfers to the household, consumption and agriculture.

c) Other quantitative data used in the report includes the following, per chapter:

- **Chapter 4 – Livelihood and context:** FSNMS, FEWSNET, CAMP, CFSAM
- **Chapter 5 – Analyses of recent shocks and stressors:** FSNMS, WFP Market Assessment, World Bank Analytical Studies, FEWSNET, OCHA, UNEP, NDVI, FAO, UNICEF, WHO, EWARN, others
- **Chapter 6 – Food insecurity and malnutrition trends:** IPC, FSNMS, UNICEF SMART surveys
- **Chapter 7 – Resilience analysis for non-conflict states:** FSNMS (rounds 2, 4, 5, 7, 8, 10, 11, 13 and 14 that reflected seasonal information, June and October), World Bank Analytical Studies, Ministry of Health (highlight from health mapping).

3.3 LIMITATIONS OF THIS STUDY

While being as rigorous as possible, the following are limitations of this study's methodology:

Quantitative data: (i) The study used available data and information, and the data used was not designed specifically for a resilience analysis. Missing but relevant data to understand resilience were identified and qualitative information used to fill gaps where possible; (ii) Available FSNMS data were representative at the state level but different households were interviewed

for each round. Hence, trend analysis for specific households (i.e. panel data) was not available. However FSNMS data are cross sectional and should be able to show changes over time for specific areas. Comparisons over years were done at aggregate levels (i.e. states, groups etc.); and (iii) Comparison of specific indicators between different years was not always possible as in some instances the content of the surveys differed from year to year.

While Chapters 4 to 6 cover all ten states, Chapters 7 and 8 focuses only on the seven states not directly involved in the conflict. During the workshop, partners agreed that despite a resilience approach being needed in conflict-affected states, current limited access and data availability made analysis unfeasible. This may be revisited should conditions change.

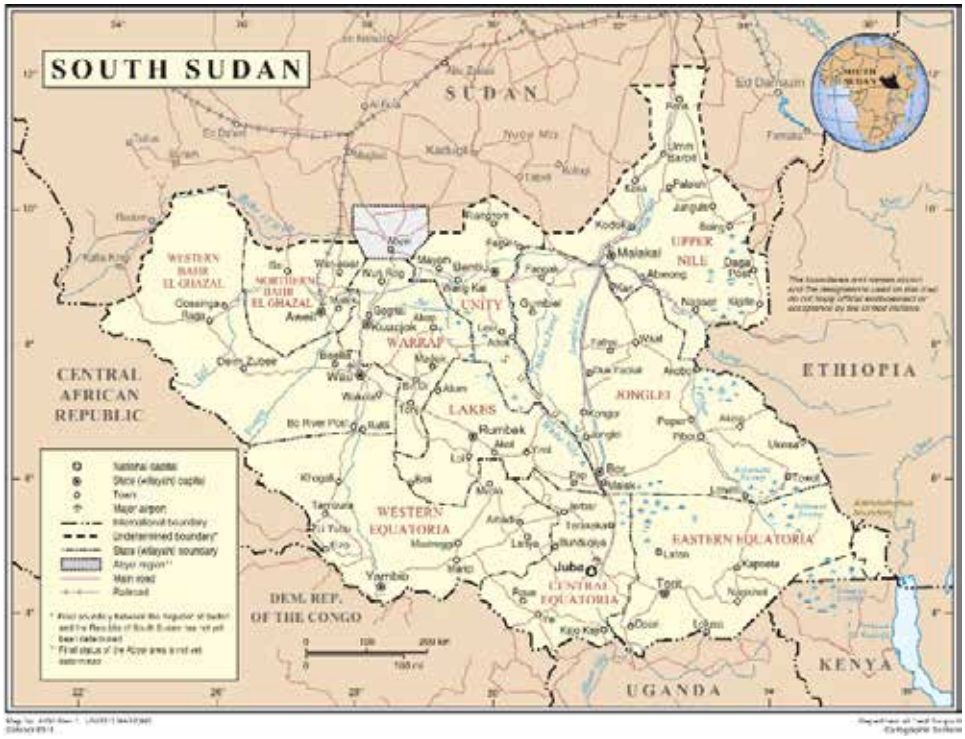
Qualitative data: This was mainly taken from secondary sources (e.g. published reports and analysis) and a consultative workshop that brought together partners with considerable experience and valuable local knowledge. Due to constraints in time and access, focus group discussions and key informant interviews were not carried out in the field to triangulate with this analysis. It is therefore recommended that these be undertaken during future assessments, to validate and expand on identified resilience capacities.

Chapter 4: Context and livelihoods

4.1 THE RECENT CONTEXT

South Sudan borders Sudan, Ethiopia, Kenya, Uganda, the Democratic Republic of Congo and Central African Republic. It covers an approximate area of 619,000 square kilometres, in ten states (which are further divided into counties): Central Equatoria, Eastern Equatoria, Jonglei, Lakes, Northern Bahr el Ghazal, Unity, Upper Nile, Warrap, Western Bahr el Ghazal, and Western Equatoria.

Map 1: Republic of South Sudan



In 2011, the population of South Sudan was estimated at 11 million, comprised of around 60 indigenous ethnic groups. The two largest of these groups are the Dinka and Nuer.

Before and after independence, the country has suffered conflict and political fragility. The Republic of South Sudan became independent on 9 July 2011 after a six-year transitional period following the signing of the 2005 Comprehensive Peace Agreement (CPA). The CPA marked the end of a decades-long war between the Government of Sudan and the Sudan People's Liberation Movement (SPLM), almost continuous since Sudan's Independence in 1955. The SPLM/Army formed the new government based on the results of 2010 elections.

Four years after achieving independence from Sudan, South Sudan remains one of the world's most insecure and fragile countries[11]. In December 2013, conflict broke out between key political groups. Causes include a fragile political settlement and historical political differences, with tensions exacerbated by the new state's general lack of progress in establishing accountable governance and politics. Other factors included poor security, often violent local competition over natural resources, and widespread lack of economic opportunities. This is especially so for youth - they comprise 70 percent of the population[12] and more than half of them are unemployed[13]. The impacts of the recent conflict are discussed below.

In spite of considerable natural resources, the country's economy is considered under-developed, fragile and dominated by oil revenue. The country's Gross Domestic Product (GDP) was worth USD 13.07 billion in 2014 (National Bureau of Statistics, South Sudan). With oil accounting for around 60 percent of GDP, 98 percent of exports and 98 percent of government revenue, South Sudan is the most oil-dependent country in the world (World Bank 2015). Agriculture sector-led growth represents the best opportunity for development and growth, but only 50 percent of the potential arable land is cultivated[14]. The overall government expenditure tends to follow oil revenue levels and is therefore extremely vulnerable to macro-economic shocks linked to fluctuations on the oil exploitation. In 2012, an oil 'shut down' occurred after the government failed to agree with Sudan over fees and this prompted a sharp decline in income and state fiscal reserves already fragile. This was also due to South Sudan's dependence on Sudan for oil refinement.

In addition to existing macro-economic instability, it is estimated that the recent conflict cost up to 15 percent of potential GDP in 2014[15]. It caused oil production to reduce dramatically (in 2011, 326,000 barrels were produced, reduced to 160,000 barrels per day in 2013), at a time when global oil prices were dropping (from USD 110 to USD 60 per barrel) and there were also high fees from Sudan (around USD 24.10 per barrel) plus transfers of revenue due to oil producing states (2 percent) and communities (3 percent). Other economic challenges include suppressed domestic production of goods and services, discouraged foreign investment, and high inflation. All this has resulted in a budget deficit that could amount to USD 1 billion (World Bank, 2015), and a decrease in GDP made worse by conflict-induced loss of assets, livelihoods, services and market infrastructures[16].

Indicators of infrastructure and access to basic social services were the lowest in the world before the recent conflict, and have worsened since. The roads currently available are of overall poor quality and are inadequate. Most are gravel or earth and in poor conditions, which makes 60 percent of roads impassable during a rainy season that lasts about five to six months[17] and makes access to markets and basic services even more limited for majority of the population. Overall, basic services such as health and nutrition, water and sanitation, education and social welfare have very low coverage among the population. Social development indicators[18] reflect this:

11 OECD States of Fragility, 2015
12 Figure from the 2008 Sudan Housing and Population Census (using a definition of youth as 18-35 years)
13 World Bank 2014c
14 FAO/WFP, 2015
15 World Bank, 2015
16 Ibid
17 South Sudan Logistics Cluster, 2015 http://www.logcluster.org/
18 World Bank, 2015

- 73 percent of the total population over 15 years of age is illiterate; 84 percent of all females are illiterate;
- Infant mortality rate is 64 per 1,000 live births (global worst rate is 107, global best rate is 2);
- Maternal mortality rate is 730 per 100,000 live births (global worst rate is 1,100, global best rate is 1);
- 83 percent of children are not fully immunised;
- 45 percent of the population do not have access to improved sources of drinking water;
- 38 percent of the population has to walk for more than 30 minutes one way to collect drinking water;
- 80 percent of South Sudanese do not have access to any toilet facilities.

Throughout this report there are references to ineffective provision and regulation of basic services. This reflects state capacity and budget gaps worsened by the recent conflict and the oil crisis. The predominance of non-state actors (UN agencies, international and local NGOs) in basic service delivery may also have de-legitimised state-building processes, in addition to protracted humanitarian assistance rather than long-term development.

The outbreak of conflict in December 2013 has displaced around 1.6 million people within South Sudan[19], and created more than 644,000 South Sudanese refugees in neighbouring countries[20]**.** Acute emergency needs are largely found in the three states most conflict-affected: Upper Nile, Unity and Jonglei. However there have been spill over effects of the ongoing conflict in Lakes, Northern Bahr el Ghazal and the Equatoria states; and thus, arguably all ten states have been affected by this crisis.

Major humanitarian consequences of the recent conflict include: widespread displacement due to violence which in many cases exposes people to further risks; high rates of death, disease, and injury; dysfunctional markets and severe price rises; loss of assets and disrupted livelihoods; increased numbers of people in emergency or crisis level food insecurity, and a major malnutrition crisis. Women and girls are vulnerable to increased sexual and gender-based violence (SGBV) when displaced, or forced to employ risky coping strategies. Many boys and young men have been forcefully recruited into armed groups or, with no other viable option, coerced into joining. Many of the 1,200 schools in Jonglei, Unity and Upper Nile have been closed due to the conflict, while others have been destroyed or occupied by armed groups. According to the Education Cluster, as of May 2015 80 schools were occupied: 51 by IDPs and 29 by military agents, the majority of which are in Greater Upper Nile states. The water supply in many towns is no longer functioning or accessible to civilians and an estimated 184 health facilities in the three conflict states have been either destroyed, are occupied or are no longer functioning[21]. Unsurprisingly, poverty levels nationwide have increased, from 44.7 percent in 2011 to more than 57.2 percent in 2015[22].

19 OCHA estimates, November 2015
20 UNHCR estimates, November 2015
21 UN OCHA, 2015
22 World Bank, 2015

Non-conflict affected states of South Sudan, which also have significant needs and vulnerabilities, are at risk of losing development gains they have achieved, as any available resources are directed to the overwhelming emergency needs in the three conflict-affected states. An already limited government budget[23] has been further reduced, compromising the provision of services to the population. The budget for 2014-2015 indicated overall expenditure of 11.278 billion South Sudanese Pounds (SSP), a reduction of 35 percent compared with the 2012-2013 budget; and the draft budget for 2015-2016 looks set to show further deterioration to some 10 billion SSP. Against competing priorities including security, social sector and infrastructure development spending in 2014-1015 received a 20 percent allocation, a reduction from the previous year: for example, education, health and infrastructure received 3.1 percent compared to 7.6 percent previously[24].

Since the recent conflict began, political negotiations have been held between the opposing parties (SPLA and SPLA In-Opposition), led by the Inter-Governmental Authority for Development (IGAD). On 26th of August, 2015, a peace deal was signed at a ceremony in the capital Juba attended by African regional leaders. As of November 2015, fighting was still ongoing in country.

For the purpose of the analysis, working definitions of violence and conflict are as follows:

VIOLENCE (WHO, 2002): "The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation."

NON-INTERNATIONAL ARMED CONFLICT (ICRC): This includes armed conflicts involving one or more non-governmental armed groups, or between governmental armed forces and non-governmental armed groups. To distinguish this from less serious forms of violence, the situation must reach a certain threshold of confrontation and two criteria are usually used: (1) Hostilities must reach a minimum level of intensity, for example when the government is obliged to use military force, instead of mere police forces; and (2) Non-governmental groups involved in the conflict must be considered "parties to the conflict" that possess organised armed forces under a certain command structure and with the capacity to sustain military operations.

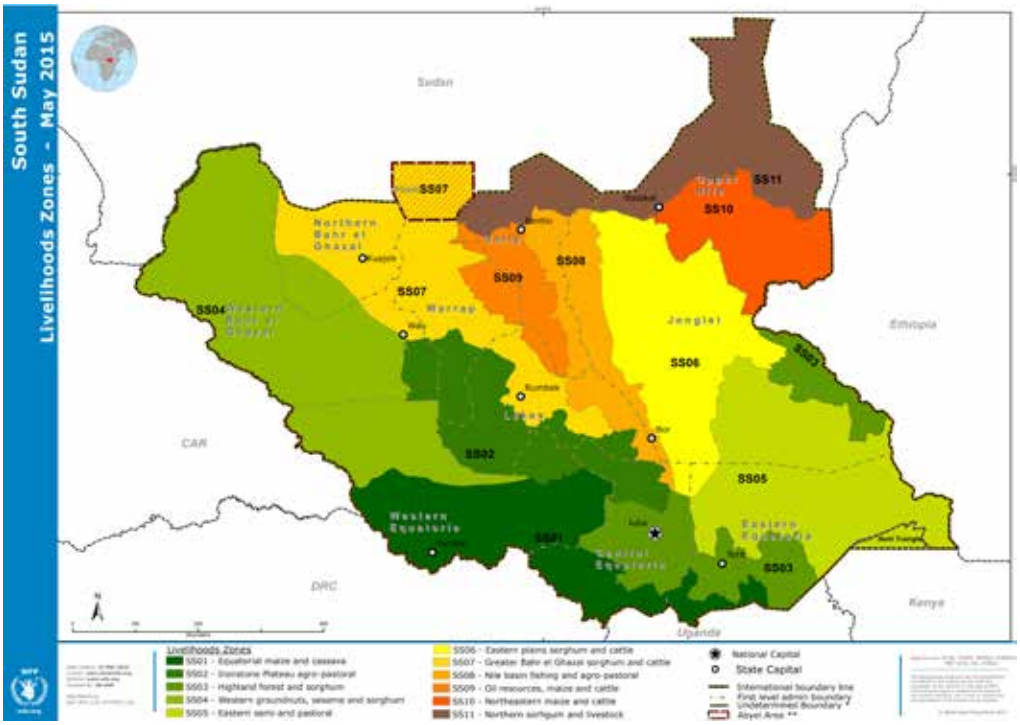
4.2 LIVELIHOOD ANALYSIS

4.2.1 Livelihood zones

The population of South Sudan is predominantly rural, and primarily dependent on subsistence farming or animal husbandry as livelihoods. Two out of three households rely on agriculture and animal husbandry as their main livelihood[25]. The risk of food insecurity varies markedly depending on access to and quality of natural resources[26] and on the level of livelihood diversification.

23 Government budget in South Sudan was, pre-conflict, beset by cuts including those linked to the fragility of oil revenue. In fiscal year 2012/13 the share of the budget for health and education dropped to below 10 percent (World Bank, 2015)
24 UNDP, 2014
25 World Bank, 2014
26 FEWSNET, 2013

Map 2: Livelihood zones (FEWSNET)

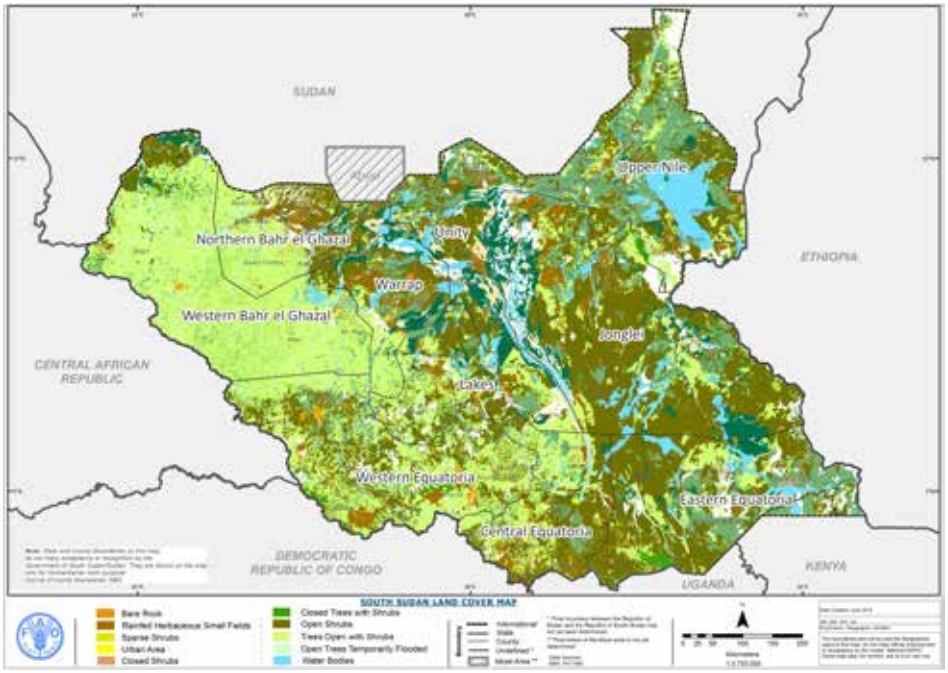


The Livelihoods Zone Map[27] (Map 2) shows the country's division into 11 zones, comprising a combinations of agriculture, animal husbandry and pastoralism or agro-pastoralism, plus fishing and oil-based livelihoods. Most forms of production are linked to the rainy season that governs vegetation growth, one which varies throughout the year depending on geographical location. Livelihood zones are described in more detail in Annex 1.

South Sudan has a tropical climate with wet and dry seasons. From the start of the rainy season in March, most of the country typically receives 750–1,000 mm of rain annually. The south and west of the country usually receives slightly more (1,000–1,500 mm). Here, as per Map 3, the main vegetation type of cover is represented by a mix of open shrubs, trees and rain fed herbaceous species. The northern and south-eastern regions receive less rainfall (500–750 mm). Despite rainfall patterns being less significant than in the previous section, these regions are the most prone to flooding in the whole country due to the presence of the river banks of the Nile and to the superficial and sub-soil water reaching these lowlands from the southern highlands, from the eastern highlands in Ethiopia, and from the western highlands in the Democratic Republic of Congo. The vegetation cover is highly dependent on the season and ranges from open shrubs to open wide temporarily flooded areas with presence of trees, to rain fed herbaceous cultures. The far south-east receives the least amounts of rains per year (less

27 The livelihood profiles used in this report are developed by FEWSNET – they have been determined through a Household Economic Analysis (HEA) conducted in the Eastern Flood Plains, and Nile and Sobat Rivers livelihood zones by the Food Economic Group (FEG) in April 2013. The HEA defines a livelihood zone as a geographic area in which households obtain their basic survival needs, notably food and cash income, in relatively similar ways. These similarities apply to both good and bad years, in that coping strategies in response to shocks are also relatively similar within the same livelihood zone.

Map 3: Land cover (FAO)



than 500 mm on average)[28]. Here, open and sparse shrubs are the predominant canopy. The main rainfall tends to start in March in the south (the Greater Equatoria regions) before progressing northwards to reach Upper Nile by June, thereby affecting planting and vegetation growth (see below for more detail).

4.2.2 Livelihood activities by type, state and season

Households typically rely not on a single income source but rather on a combination that varies across states and livelihood zones, as well as throughout the year. In rural areas, households are typically involved in agriculture and pastoralism (often combined) as well as other livelihood activities including casual labour, sale of natural resources and skilled or salaried labour.

The rainfall seasons that are both unimodal and bimodal determine crop harvests. The bimodal areas cover much of Greater Equatoria (Western, Central and Eastern Equatoria) while the rest of the country has a unimodal regime. In unimodal areas, the rainy season starts in May and ends in October while in bimodal areas, rainy season starts in March and ends in mid-December. Agricultural performance varies considerably depending on latitude and rainfall, with the possibility of two or even three harvests per year from the same plots in the Greenbelt in Greater Equatoria, and a single harvest in the unimodal areas further north.

Cattle-based pastoralism is the customary livelihood of many groups in the country. With a national herd estimated at 11 million (just outnumbering people)[29] cattle are central to the country's economy and to the sociocultural life of many communities. Pastoralism, based on

28 FEWSNET, 2013
29 IRIN, 2015. Available at: http://www.irinnews.org/report/101012/cows-and-conflict-south-sudan-s-slow-motion-livestock-crisis

seasonal migration in pursuit of pasture and water, is usually combined with small-scale, rain-fed cultivation of staple crops including sorghum. Over the last 18 months, livestock production in many parts of the country has faced a wide range of challenges. As many livestock owners in conflict-affected counties fled their area of origin, millions of animals were displaced leading to fresh outbreaks of disease. This also contributed to rising tensions between pastoral groups and farmers, as well as within different pastoralist communities over competition on natural resources.

South Sudan - Indicative Seasonal Cropping Calendar

		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Unimodal rainfall zone	Rainfall	Dry season		Wet season						Dry season			
	Main crop		Land preparation and planting		Growing season			Harvest					
	Long-cycle crops				Growing season					Harvest			
Bimodal rainfall zone	Rainfall	Dry season	Wet season								Dry season		
	First crop	Land preparation and planting		Growing season			Harvest						
	Second & third crops						Land preparation and planting		Growing season		Harvest		

Crop production is mostly on hand-cultivated small plots farmed by large family aggregations usually polygamous in nature. The area cultivated typically depends on (a) the size of the household labour force and/or the ability of households to provide in-kind payment (typically food/beer) for traditional working groups (*nafeer)* and (b*)* security of access to land, often compromised by competition between different groups and interests (see later section on stressors).

The main crops cultivated vary by state, but sorghum is the key staple in all except the three Equatoria states and Jonglei. In Upper Nile and Unity sorghum, maize and cassava are the major crops grown. Other crops cultivated include bulrush (especially in Western Bahr el Ghazal, Warrap and Lakes states), finger millet and rice (Greater Equatoria states), groundnuts (the main cash crop in northern states), sweet potatoes and yams, sesame, tobacco and a range of vegetables.

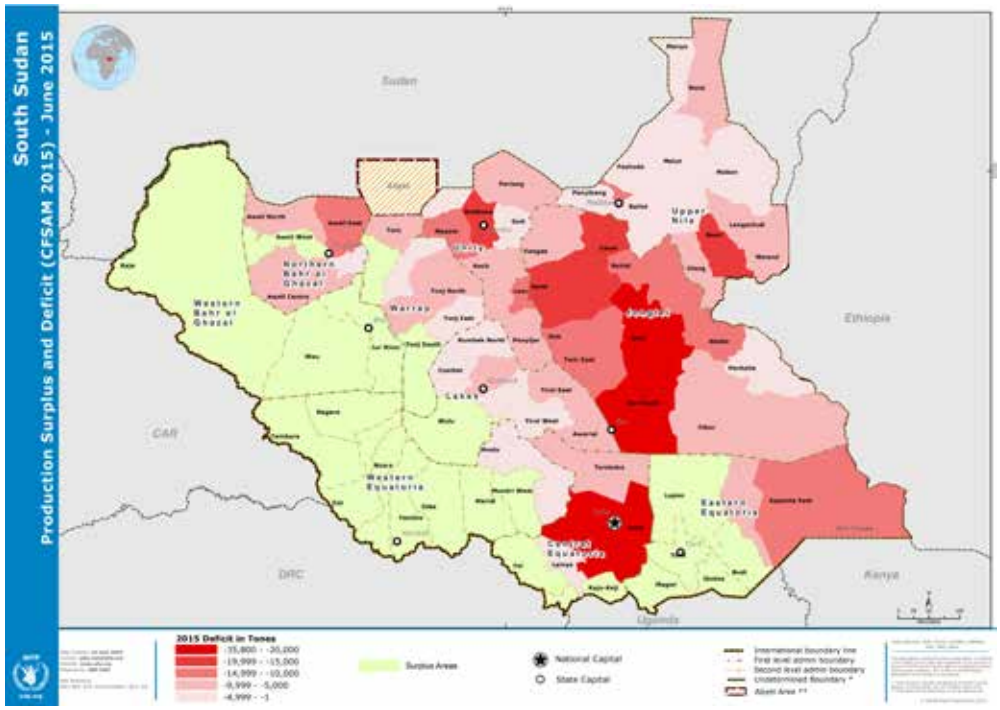
Table 1: Percentage of farming households and average harvested cereal area by households (CFSAM 2015)

State	Farming households (percent)	Average cereal area (ha/household)
Central Equatoria	64	1.27
Eastern Equatoria	76.5	1.09
Jonglei	23.2	0.64
Lakes	72.5	0.89
Northern Bahr el Ghazal	67.1	0.77
Unity	29.2	0.42
Upper Nile	20.5	1.09
Western Bahr el Ghazal	78.2	0.98
Warrap	65.8	0.85
Western Equatoria	87.7	1.39
SOUTH SUDAN	58.0	0.99

Table 1 shows the average harvested cereal area per household and by state in 2014. Greater Equatoria and Upper Nile are the states with the highest cultivated area per household for cereals. Given that Upper Nile has the least percentage of households growing crops (20 percent), followed by Jonglei (23 percent) and Unity (29 percent), it is not surprising that they have the highest production deficits (relative to the state's requirements). Jonglei and Unity also have the least area cultivated per household. In Central Equatoria, despite a high percentage of households cultivating crops, local production is not able to meet internal requirements. This is probably due to the high food demand from the capital (Map 4). Cereal deficits do not translate into extremely low food availability in Central Equatoria thanks to the continuous inflow of commodities from neighbouring surplus-producing areas, notably Western Equatoria state and Uganda.

The reduction in planted areas and limited access to agro-inputs in Greater Upper Nile states (worsened by recent conflict) constrained productivity and cereal production, explaining the increasing gap between internal supply and requirements. The CFSAM 2015 shows reductions in the harvested areas by 73 percent in Unity and Jonglei states, by 57 percent in Upper Nile, and by 13 percent in Lakes when compared to 2013. A significant decline of cereal harvested in conflict-affected states in 2014 was compensated by increases in planted areas in Northern Bahr el Ghazal, Western Bahr el Ghazal and Central Equatoria. Hence net overall production for 2014 was estimated at one million tonnes, about 13 percent above the previous year's output. However the majority of counties still remain at a cereal deficit due to the poor infrastructure that makes it difficult to move goods between counties.

Map 4: Production surplus and deficit (CFSAM 2015 – FAO/WFP)



Agriculture and crop production are supplemented by other livelihood activities, especially in poor households. Many of these livelihood activities[30] are to some degree unsustainable and affected by climatic and man-made shocks. As shown in Figure 4, a majority of households are involved in selling natural resources – for example collection of grass, fish and firewood, or burning of charcoal.

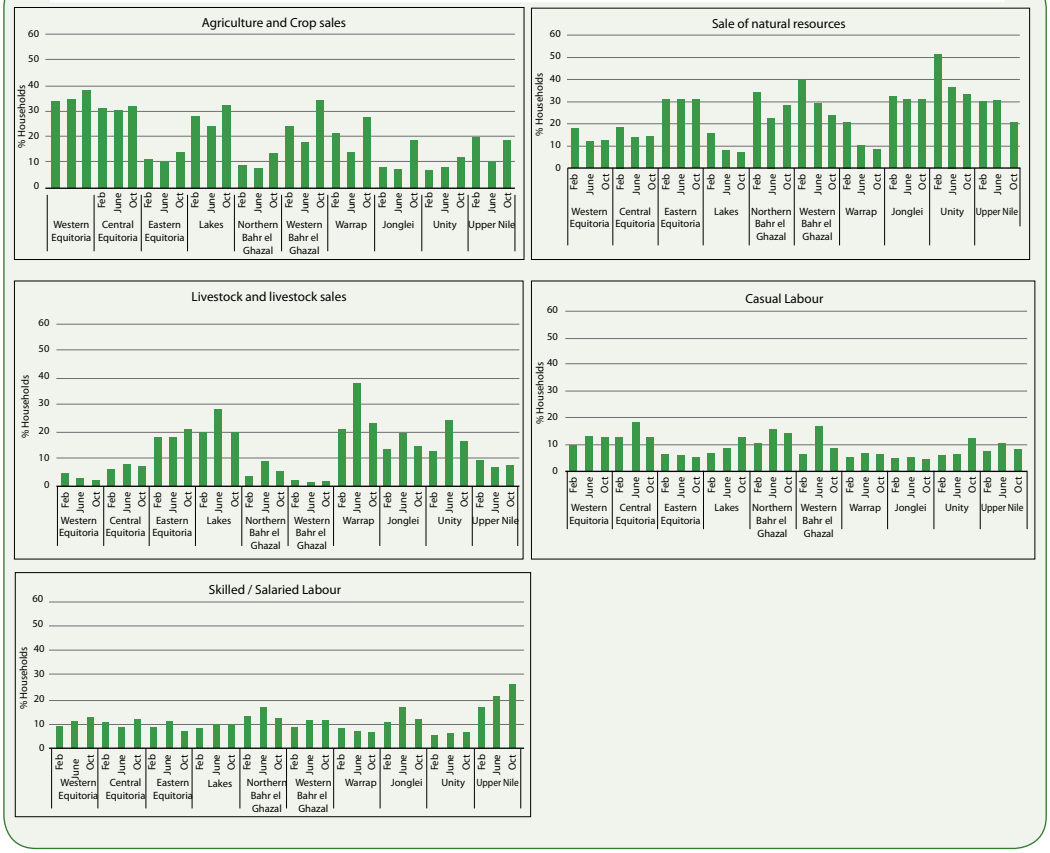
The main sources of income in rural South Sudan are agriculture and crop sales, livestock and animal product sales, and sale of natural resources. There are significant differences in livelihoods patterns across the ten states - for instance, households in Warrap, Eastern Equatoria and Lakes are more involved in livestock production and sale, those in Western and Central Equatoria are more involved in agriculture and crop sales and those in Greater Upper Nile are more involved in the sale of natural resources.

The graphs in Figure 3 show the seasonal distribution of the main income generating activities across different states. Agriculture and crop sales are more relevant for rural populations across the country (except in Upper Nile) between August and October, when harvests start reaching households and markets both in bimodal and in unimodal cropping areas. The sale of natural resources varies heavily by season with different patterns in different states (according to the crop and natural resource base). However, the peak of dependency on natural resources is in the first quarter of the year, which coincides with the early stages (and often with the early onset) of the lean season in agro-pastoral and pastoral areas in Greater Upper Nile, Western and Northern Bahr el Ghazal, and Eastern Equatoria states. These states also register the highest dependency on sale of livestock and animal products around the second quarter of the year, when the seasonal April to June rains in the pastoral areas allow regeneration of pastures and replenishment of water sources, leading to calving and higher milk production. Casual and salaried labour involves a smaller percentage of the population and appears less seasonal compared to other activities, despite a common spike around June observed in many states. Upper Nile registers on average a higher percentage of households relying on salaried labour over the reference period. This situation however has changed since the oil exploitation (a key source of salaried labour in Upper Nile) was disturbed by the combined effect of conflict and decline in crude oil prices in 2014, as revealed from the round 13 FSNMS data.

Detail on the sale of natural resources as an income generating activity is given in Figure 4, which shows variations across states and seasons. Sale of natural resources, which is typically unsustainable and destructive, is depended on more during the dry season (January-February) when agriculture and pastoralism are less productive. Of natural resources sold, firewood is the most common followed by charcoal, which is more predominant in the three Equatoria states. Third most sold is grass (either for thatching or for fibre mats), particularly in the states of Northern and Western Bahr el Ghazal, Warrap and the three conflict-affected states. Upper Nile state has the highest percentage of households involved in fishing.

30 For the purpose of this study the original 19 livelihood sources were recoded as follows: *agriculture and crop sales* including agriculture and sale of cereals and other crops and products; *livestock and livestock sales including livestock and sale of livestock and sale of animal products; casual labour* including casual labour related with agriculture, construction and other non-agriculture labour; *skilled and salaried labour; sale of natural resources* including charcoal, firewood, fish and grass sale; *non-sustainable activities* including begging, sale of food assistance, borrowing and gift from family.

Figure 3: Income activities by state and seasons (FSNMS)



Many livelihoods or income sources are not reliable and sustainable according to a measure used by the FSNMS called Income Source Reliability and Sustainability (ISRS)[31]. ISRS scores range from 1-9 and are divided into three categories: poor (scores 1-3); medium (scores 4-5); and good (scores 6-9). Poor/low ISRS includes begging, borrowing, sale of food aid, casual non-agricultural labour (e.g. in mines, construction), reliance on gifts, sale of natural resources such as firewood, charcoal and grass. By contrast, good/high ISRS includes crop, livestock and products and sales, salaried work and trade or business. Medium ISRS includes alcohol sale, casual agricultural labour and wild foods sale[32].

Low ISRS indicates compromised resilience. For example, households whose primary source of income is sale of firewood and charcoal are likely to be depleting the local natural resource base, while households resorting to begging, borrowing or sale of external assistance are clearly lack ways to cope over the long-term. Where competition over natural resources can prompt dispute, low ISRS compromises resilience to local or inter-group conflict.

31 This classification is based on the WFP South Sudan BRACE impact study.
32 Ibid

Figure 4: Activities including sales of natural resources (FSNMS)

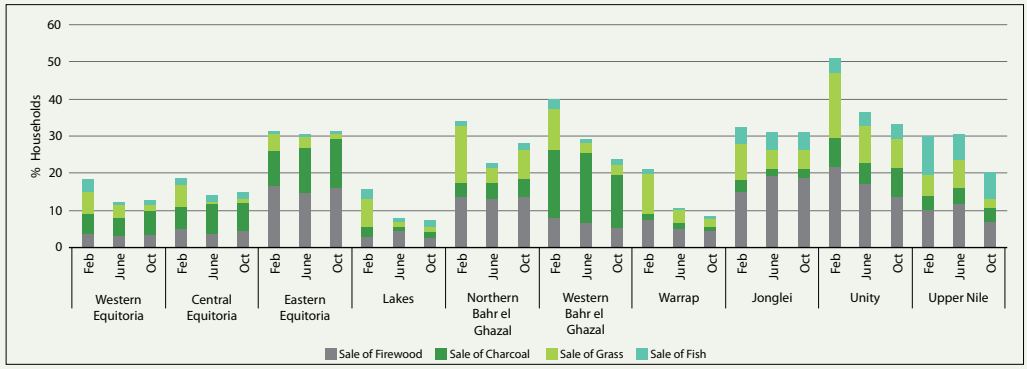
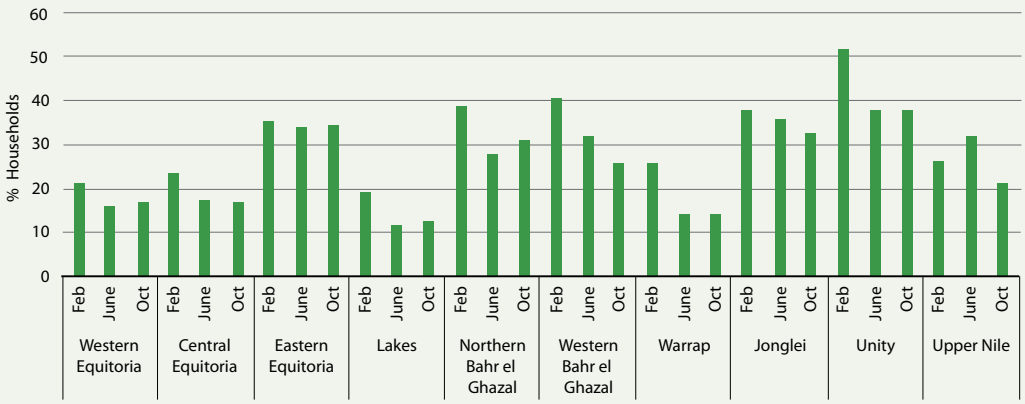


Figure 5 shows the percentage of households defined as having low ISRS, disaggregated by states and seasons. Conflict-affected Greater Upper Nile states have a high proportion of households involved in unsustainable or unreliable activities year round, with seasonal peaks in February (reaching over 50 percent in Unity). Jonglei and Unity states had a high proportion of households relying on these activities even before the conflict, whereas in Upper Nile a sharp increase of population involved in ISRS activities was observed after 2013. Other states show equally critical levels of dependence on unsustainable and/or unreliable income sources. For example Eastern Equatoria, Northern Bahr el Ghazal and Western Bahr el Ghazal all show ISRS ranging between 20 and 40 percent of the households throughout the year.

Figure 5: Income sources of poor reliability/sustainability (low ISRS) by states and seasons (FS



Urbanisation is affecting livelihoods (and society) in South Sudan. In 2009, 16 percent of the population lived in urban areas[33] including 8 percent of poor people[34]. These figures are likely to have since risen, not least due to the recent conflict that displaced a wide range of rural population dependant on the primary sector to urban areas, such as Juba, Bentiu, Bor in search of security, services and care. In urban settings, these migrants face constraints in finding

33 2008 NBS census
34 World bank, 2014b

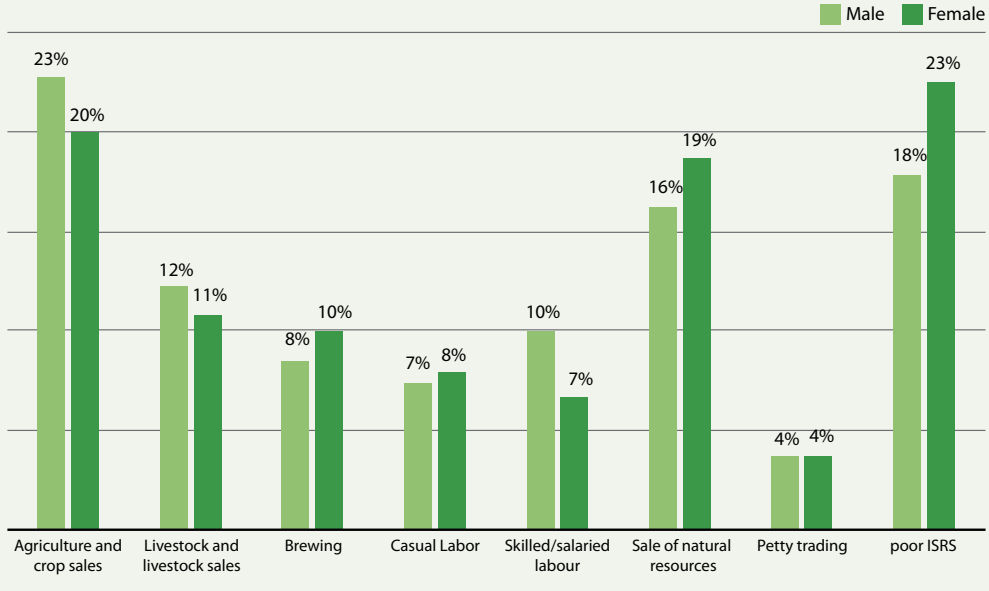
sustainable livelihoods and are therefore more vulnerable to food insecurity. At the same time, some population may have fled urban areas affected by the conflict for rural settings. In urban areas, most of the labour force is absorbed by trade and service sectors (mostly informal, employing almost one third of the labour force), and the public sector (particularly military, social service and construction jobs)[35]. The informal sector accounts for a large share of the urban job market, a likely magnet for the increasing number of people (especially young people) who migrate to South Sudan's towns and cities.

In general, business and the labour market in non-agricultural suffers from a weak regulatory environment, limited access to credit and an unfavourable investment climate. With low levels of skills and education (particularly secondary level and above), many local job-seekers are out-competed by other East African nationals who make up of 60 percent of all skilled labour in Juba and 30 percent in all urban areas[36]. A 2014 World Bank study indicated that about 58 percent of foreigners in Juba have secondary education compared to only 30 percent of nationals. The situation where locals are 'out-competed' has arguably been exacerbated by lack of regulations against foreign firms bringing or hiring their own workforce rather than recruiting locally.

4.2.3 Women and livelihoods

Women and female household heads usually carry out specific livelihoods activities, often to supplement food and income generated from agriculture and pastoralism. In rural areas it is common to observe a diversification of such activities carried out by women (and increasingly youth), although often these are environmentally and socially less sustainable as captured in low ISRS scores. Figure 6 shows that 23 percent of female-headed households depend primarily on unreliable or unsustainable income sources (i.e. ones with a low ISRS score) compared to

Figure 6: Comparison of livelihoods between male and female-headed households (FSNMS)



35 Ibid
36 Ibid

18 percent of male-headed households. It also shows that women are more likely to depend on the sale of natural resources such as firewood, charcoal and grass for thatching: 19 percent of female-headed households depend on this, compared to 16 percent of male-headed households.

The graph also shows that men are more involved in agriculture, livestock, and skilled or salaried labour (all activities with high ISRS scores). In rural areas, women's domestic burden (with few support or childcare options), socioeconomic expectations, and relative lack of formal education explain this difference.

Forced into poor ISRS activities and facing a range of entrenched socio-cultural barriers, women and female-headed households tend to be more economically vulnerable than male headed ones. Oxfam (2013) found that poverty[37] levels in female-headed households were 57 percent, compared to 48 percent in male-headed households. This is linked to the high domestic demands of women, their reduced access to education and the prevalence of protection issues including early marriage and SGBV (see later section on this). Female-headed households are particularly common in rural areas, where men have gone to towns for work or have joined armed groups. The crisis that started in December 2013 is likely to have increased the proportion of female-headed households. This may be particularly so in urban areas (including Juba) where many fled after outbreaks of violence. The number of orphans and child-headed households also increased. Qualitative inputs to this analysis also suggest that women are more likely to suffer the impact of a conflict-disrupted or fickle oil-based economy. Those whose husbands fled, left or were killed have a greater responsibility for supporting the family, as do those whose husbands are present but cannot work or even leave the house because of insecurity. Such women face challenges including a lack of job opportunities, a lack of suitable skills or education, and sociocultural 'norms' which prohibit women from engaging in certain livelihood activities.

37 It needs noting here that poverty, defined by the monetary or Global Wealth Index, is not a proxy of food insecurity comparable across different households, especially in analyses that compare by gender or sex of household head. This is due to evidence that where women are better 'administrators' of a household economy, conditions of poverty may not translate to the same degree of food insecurity as they would in a male-headed (or simply differently administered) household.

Photo: ©WFP/Giulio_dAdamo

Chapter 5: Shocks and Stressors

This section looks at contextual shocks and stressors which form the backdrop for resilience. In this analysis household resilience is understood as the ability to withstand and adapt in the face of shocks, natural or man-made, whose impacts are worsened by the presence of stressors that undermine food security, nutrition, and general wellbeing.

For the purpose of the present analysis, the following definitions are used (DFID 2011: 8):

- SHOCKS are sudden events impacting the vulnerability of a system and its components.
- STRESSORS are long-term trends that undermine the potential of a given system and increase the vulnerability of the actors within it, or slow-onset hazards that develop and pass a 'tipping point' to become extreme events.

In any context, the categories of 'shock' and 'stressor' can be difficult to apply, particularly when it comes to the speed of 'onset' of a hazard (e.g. drought, disease incidence/outbreak). The following analysis divides the contextual hazards and risks into shocks and stressors by applying, as closely as possible, the definitions used here for shocks and stressors.

It is in this context that the resilience of households – defined as their sustained food and nutrition security despite shocks and in the presence of stressors - is analysed in this RCA.

5.1 SHOCKS

Overall, the country is highly shock-prone. The range of different shocks correlate with those of the wider region, yet indicate a country with unique socio-cultural, political, economic and ecological character. Key shocks identified by this analysis include **high food prices and economic shocks, insecurity and violence including the recent conflict, hydro-meteorological shocks such as flood or drought episodes, and human, animal or crop disease outbreaks**.

Key shocks are listed here using information from the FSNMS surveys and a range of other sources. Households' perceptions of key shocks experienced three months prior to the survey were explored in all FSNMS rounds, disaggregated by state and season[38]. The information presented below is the seasonal state average from October 2010 to February 2015.

5.1.1 High food prices and economic shocks

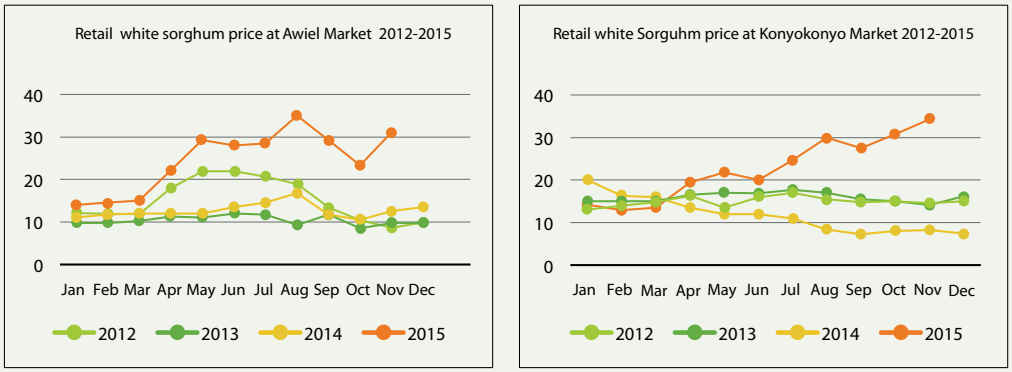
'High food prices' was the most common shock reported in the FSNMS surveys. Food price hikes are sudden onset shocks of critical significance to households, in particular those with higher dependence on markets, less disposable income or assets, and the presence of existing vulnerabilities.

38 Seasonal averages per state are given from October 2010 to February 2015. For Jonglei, Unity and Upper Nile, data was not collected in February 2014 due to conflict, so shocks related to the conflict and insecurity are underestimate averages for February for these state especially for conflict, violence and lack of movements are underestimated.

High food prices are a symptom of broader economic shocks affecting households, communities, regions and food production systems. As depicted in the earlier section on context, the economy is dominated by oil revenues. Consequently, government expenditure that tends to follow oil revenue levels is vulnerable to economic shocks caused by changes in production and prices. The recent conflict dented anticipated GDP by 15 percent and triggered reduced foreign investment, reduced domestic production and increased inflation. It also caused oil production to reduce dramatically at a time when global prices were dropping and there were high fees from Sudan.

These economic shocks caused increased food prices in urban and rural areas. In 2012, the closure of the border with Sudan over a stalemate on oil revenue underpinned prices spikes of main food commodities, notably sorghum. In urban areas, where people depend less on own food production, the impact of this on increased vulnerabilities is greater. Many basic non-food commodities have become more expensive for households (with possible 'price fixing' in some areas). Overall, general poverty has increased. The impact of the oil price decline is estimated as 300,000 additional impoverished persons, with 42 percent of the population facing decreased food consumption by 10 percent or more (particularly in urban areas where people purchase a greater proportion of the food they eat)[39].

Figure 7: Retail white sorgum price at Awiel and Konyokonyo (Juba) Markets 2012 – 2015 (WFP, 2015)

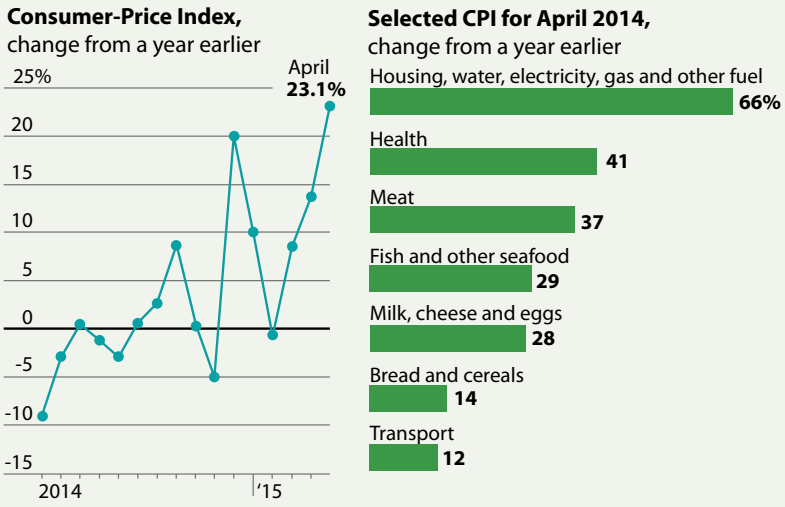


The South Sudanese Pound (SSP) has depreciated since the outbreak of the recent conflict. The unofficial exchange rate was stable until May 2014 at around 4 SSP/USD 1, but increased to 8 SSP in May 2015 and to 12.25 SSP by July 2015[40]. A lack of hard currency underpins the depreciation of the South Sudanese Pound (SSP), which discourages traders and limits importation and food availability[41].

Figure 8 shows data from the South Sudan National Bureau of Statistics (NBS) on recent changes in the Consumer Price Index (CPI)[42]. Selected indicators are given to show how much more households have been forced to spend on basic goods in the last year: overall a 23.1 percent increase in prices was seen. Food became more expensive,

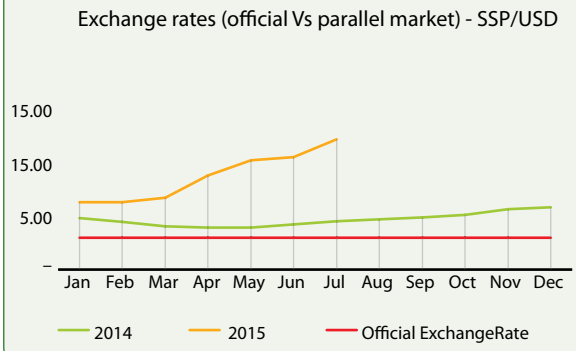
39 World Bank, 2015
40 WFP, July 2015
41 Ibid
42 As published in The Wall Street Journal, 10 June 2015

Figure 8: Consumer Price shifts from 2014 to April 2015



with meat going up by 37 percent, while the costs of housing, water, electricity and fuel went up by 66 percent, and health care by over 40 percent. The CPI continued to increase following worsening macroeconomic conditions (mainly low importation from Uganda due to high fuel prices and depreciation of local currency) and limited access of traders to the markets especially in the conflict Greater Upper Nile states. A 47 percent increase on CPI for food and non-alcoholic beverages was observed between May 2014 and May 2015, and a 64.3 percent increase between June 2014 and June 2015. Similarly, CPI for health services increased by 147 percent between June 2014 and June 2015, an indication of a hyperinflationary economy[43].

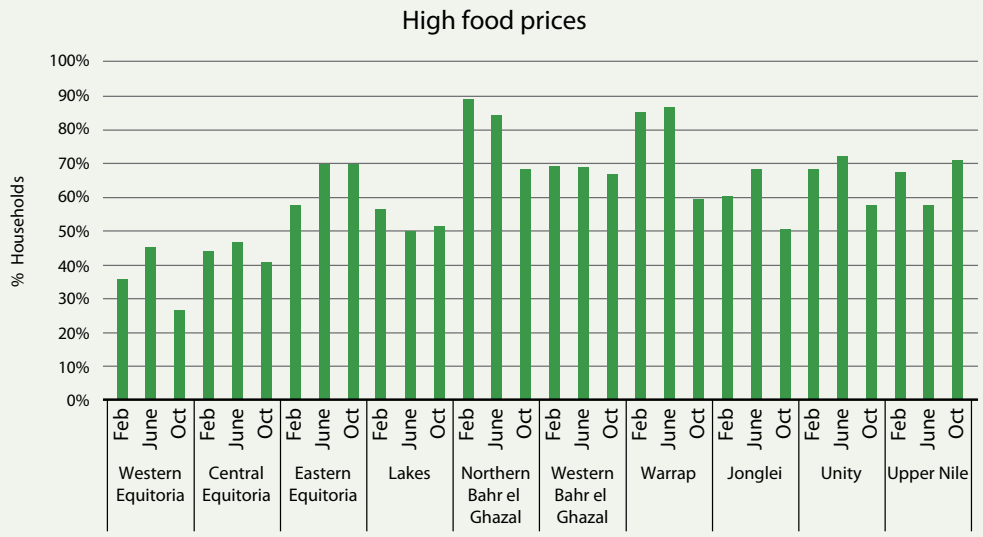
Figure 9: Exchange rate SSP/USD (Official vs Parallel) – WFP, July 2015



Those who depend more on external markets (as opposed to internal production) are more vulnerable to the negative impacts of food price rises. This is not surprising given that markets are the main source of food for rural households, and even more so for urban households. The 14 FSNMS rounds conducted between 2010 and 2015 show that on average 50.5 percent of the food value consumed at home is supplied from the markets. Higher dependence on markets was observed in urban areas. It was also the only shock with low variance across seasons and states. The perception is that high food prices are affecting households in all states due mainly to low production, bad road access, and instability of markets. Exceptions to this are Western and Central Equatoria states which showed less dependence, presumably linked to better infrastructure and production.

43 WFP, July 2015

Figure 10:Households affected by high food prices by states and seasons (FSNMS 2010–2015)

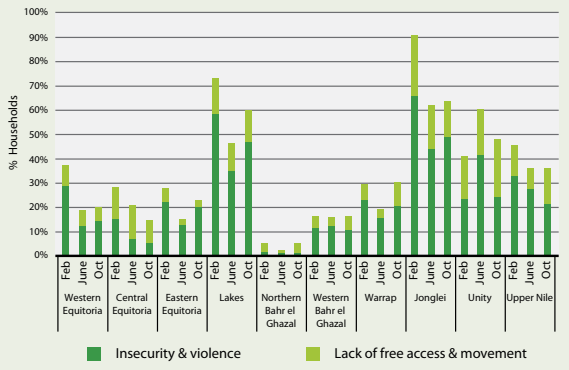


Price rises, as explained in this section, compromise household access to food through markets - usually at just the times when those households are forced to rely on markets.

5.1.2 Insecurity and violence

Insecurity and violence, together with lack of freedom of movement, was the second most prevalent shock recorded by FSNMS in all states. Multiple aspects of wellbeing are compromised by outbreaks of insecurity and violence, whose impacts are worse for households with existing vulnerabilities.

Figure 11: Insecurity and violence, and lack of movement, by states and seasons (FSNMS 2010-15)



According to the FSNMS data, Greater Upper Nile states were most affected by insecurity and violence, especially after the start of the crisis in 2013. In Lakes, 50 percent of households reported experiencing insecurity and violence, most consistently during the dry season around February.

5.1.2.1 Recent conflict

Violent conflict broke out in December 2013 (see earlier section on Context). The fighting has displaced more than 2.2 million people – around 1.6 million IDPs internally, and more than 640,000 refugees displaced mainly to Kenya, Uganda, Sudan and Ethiopia[44]. It has significantly

44 UNHCR and UNOCHA November 2015

destroyed or disrupted assets, livelihoods, pastoral migration routes, infrastructure including basic services, and human capital. Where reported, human rights abuses and sexual violence reached alarmingly high levels[45]. The negative impacts of this shock, which was sudden onset and in many places is still ongoing, are multiple at household level. Food insecurity, malnutrition and poverty were created or exacerbated on a wide scale.

In November 2015, the estimated number of civilians seeking safety in six Protection of Civilians (PoC) sites located on UNMISS bases was 178,900[46], the highest number of IDP residents since the start of the conflict[47]. Although the Greater Upper Nile states have been most affected by the conflict, there are protection risks for civilians in the rest of the country too. According to a Protection Cluster report from May 2015, risks include inter- and intra-communal conflict, conflicts between pastoralists and agriculturalists over land and resources, violence by armed youth, desertions and defections, and lack of accountability and good governance resulting in a climate of impunity.

Lack of protection for civilians from all forms of violation, exploitation and abuse within the POC camps is a key issue affecting assistance to IDPs. Congestion and insecurity caused by the presence of armed elements or groups of competing youth are factors contributing to protection risks. Sexual and gender-based violence and crime are also prevalent in and around many POCs[48].

The presence of landmines and unexploded ordnance from this conflict as well as previous ones[49], also poses a risk to lives and livelihoods and is another factor inhibiting efforts to deliver humanitarian aid.

Map 5[50] illustrates one particularly strong indicator of the recent conflict – population displacement. Using information from 2008 to August 2014 (nine months after the violence broke out), the areas shaded red/orange or blue represent counties with high levels of outward and inward population movement, respectively. In high conflict counties in Upper Nile and Jonglei up to 60 percent of the population has been displaced between 2008 and 2014. In many areas the scenario has continued to worsen since then.

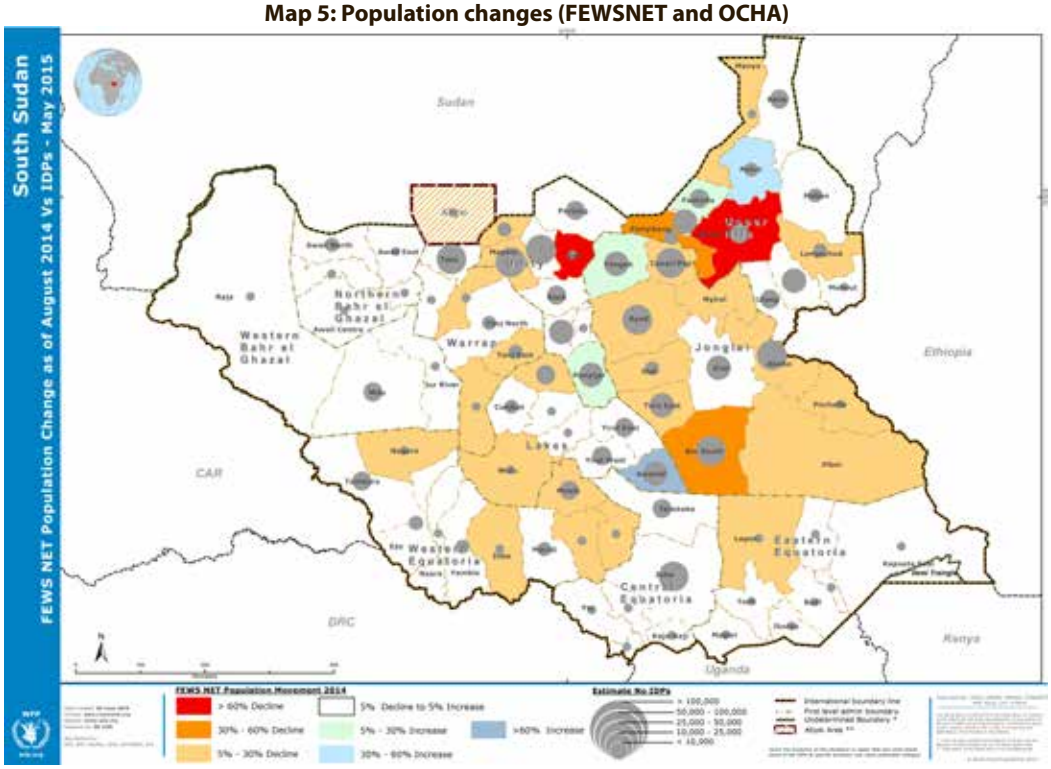
5.1.2.2 Local insecurity, violence and cattle raiding

Competition over natural resources is a prominent feature of chronic and local-level insecurity. In particular, inequitable access to land and water is a major source of continued violence that flares up with seasons and events such as influxes of IDPs and refugees. Resource conflicts between agriculturalists and pastoralists are also common and worsened by upheavals brought by the recent conflict.

Local insecurity is further exacerbated by large numbers of unemployed and alienated youths (see following section on stressors) - over half of the youth in South Sudan are unemployed[51].

45 Human Rights Watch, World Report 2015
46 The majority of these are in Bentiu POC (103,913 civilians). Other POC camps are Malakal (30,410 civilians), Juba UN House (28,663 civilians), Bor (2,289 civilians), Melut (665 civilians), & Wau (202 civilians). Source: UNMISS Situation Report, 13 July 2015
47 South Sudan Protection Cluster Report, May 2015
48 Ibid
49 NPA, 2014
50 FEWSNET, 2014
51 World Bank 2014c

Map 5: Population changes (FEWSNET and OCHA)



Cattle-raiding is another common form of violent insecurity, with a long history in pastoralist areas. Increased ethnic and social tensions and the rise in the number and availability of small arms in recent years has led to these raids becoming more violent.

Map 6 (based on data from OCHA and other sources) shows occurrence of insecurity incidents including armed skirmishes, cattle raiding and inter-clan violence from 2011 to 2015. It gives a strong indication of the prevalence of insecurity and local level violence in many counties.

5.1.3 Natural shocks

5.1.3.1 Hydro-meteorological shocks - flood and drought episodes

Households are affected by sudden onset hydro-meteorological shocks (e.g. flash flooding linked to climatic events) or cumulative stressors that 'tip' into an acute hazard (e.g. drought as a result of successive failed or delayed rains, or flooding as a result of storms and associated with eroded land and other causal factors). Farmers and pastoralists are also affected by livestock diseases, weeds and pests. Flood and drought episodes typically occur in October and June, respectively and affect different states differently. For example the Greater Upper Nile region is most affected by floods, as seen in the seasonal access road map, while drought is more common in Eastern Equatoria. Incidence of late onset of rains, as reported in the FSNMS, normally relates to what stakeholders engaged in agricultural production perceive as delays affecting the cultivation, although these cannot necessarily be categorized as drought.

Map 6: Incidence of conflict from 2011 to May 2015

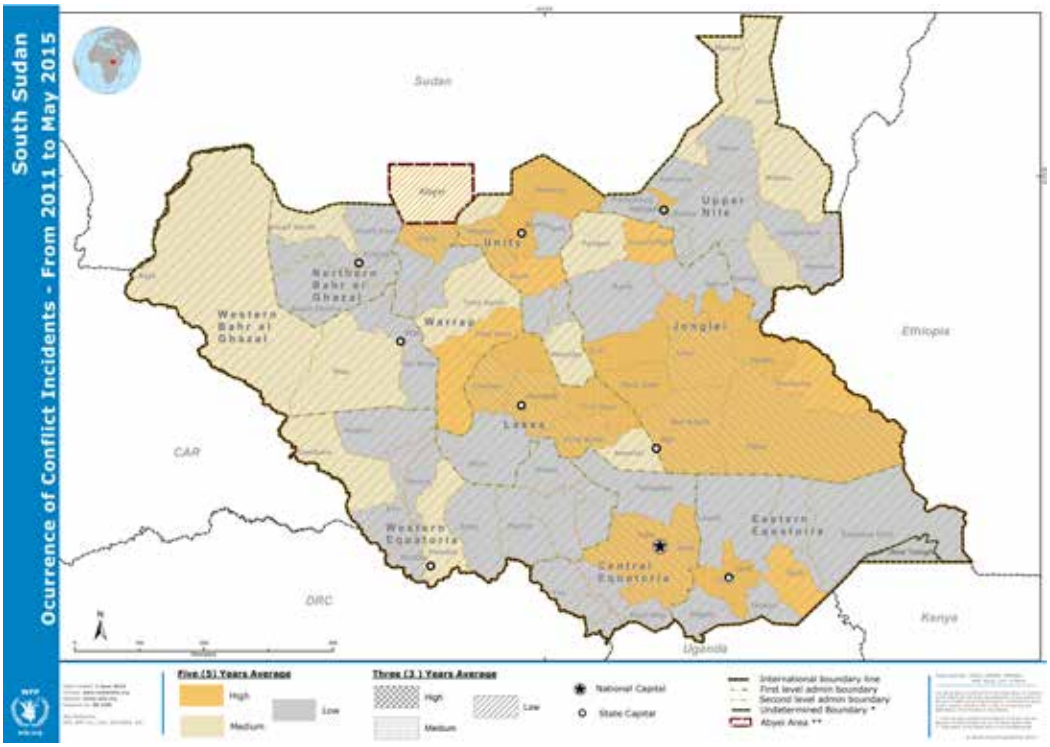


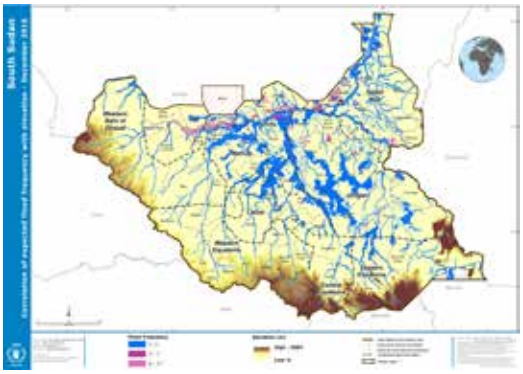
Figure 12: Shocks affecting agriculture and pastoralism (FSNMS 2010-15)

Floods

Heavy seasonal rains from late April cause flooding in many parts of the country, especially in low lying areas. United Nations Environmental Programme's (UNEP) flood risk data[52] were used as a proxy for flooding as they indicate the expected frequency of flood occurrence. Flood-prone areas were also identified by the Regional Centre for Mapping of Resources for Development[53] using long-term averages. By combining elevation and flood prone areas, Map 7 shows how flows of superficial water move from southern highlands between Uganda and South Sudan, Ethiopian highlands in the east, and western highlands between Congo and the centre-northern part of South Sudan. The areas with the highest frequency of floods, according to the long term average, are internal and low-lying areas of the *Sudd* especially in Northern Bahr el Ghazal, Warrap, Jonglei and Upper Nile states.

Around 60 percent of roads become impassable during the rainy season (see infrastructure section). Flooding hampers mobility to and from markets as well as access to basic services and humanitarian assistance. It has also drastically worsened living conditions (especially in IDP or POC camps) as it results in increased communicable and water-borne diseases such as cholera, diarrhoea and malaria. Flash flooding can cause loss of assets, infrastructure and services, livelihoods (through destruction of planted or stored crops and even livestock) and lives. In the months following the outbreak of conflict in December 2013, the onset of heavy rains and subsequent flooding became a major humanitarian concern. Congested POC camps were inundated and living conditions became increasingly unbearable. Even in areas outside camps there were high levels of displacement caused by flooding, which for many households and communities compounded earlier displacement or vulnerabilities caused by the conflict.

Map 7: Correlation of expected flood frequency with elevation (showing more flooding in lower-lying areas)



Map 8: Recurrence of below-average growing seasons

52 This dataset includes an estimate of flood frequency. It is based on three sources: 1) A GIS model using a statistical estimation of peak-flow magnitude and a hydrological model using HydroSHEDS dataset and the Manning equation to estimate river stage for the calculated discharge value; 2) Observed floods from 1999 to 2007, obtained from the Dartmouth Flood Observatory (DFO); and 3) Flooding frequency according to the UNEP/GRID-Europe PREVIEW flood dataset. In areas where no information was available, it was set to 50 years returning period. The unit used is the expected average number of flooding events per 100 years. This product was designed by UNEP/GRID-Europe for the Global Assessment Report on Risk Reduction (GAR). It was modeled using global data. Credit: GIS processing UNEP/GRID-Europe, with key support from USGS EROS Data Centre, Dartmouth Flood Observatory 2008

53 The Regional Centre for Mapping of Resources for Development (RCMRD) was established in Nairobi, Kenya in 1975 under the auspices of the United Nations Economic Commission for Africa (UNECA) and the then Organization of African Unity (OAU), today African Union (AU). RCMRD is an inter-governmental organization and currently has 20 contracting Member States in the Eastern and Southern Africa Regions; Botswana, Burundi, Comoros, Ethiopia, Kenya, Lesotho, Malawi, Mauritius, Namibia, Rwanda, Seychelles, Somali, South Africa, South Sudan, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe.

Drought

Similar to neighbouring countries in the region, South Sudan experiences an annual dry season that can at times become a drought. Below average and sporadic rainfall cause water shortages, poor harvests and livestock loss, with vulnerabilities worsened by conflict, insecurity and displacement.

In 2011, the country experienced the drought crisis that also affected the entire Horn of Africa region. In 2014, the shifting rain patterns again put the country at risk of severe water shortages and food insecurity, worsened by the conflict that started in December 2013. Map 8 shows the risk of drought based on the number of poor growing seasons experienced in different counties between 2010 and 2014, and on the proportion of areas affected. This is a reflection of droughts affecting crops and pastures, non-planting or little maintenance of crops by households affected by conflict. Remote-sensed 'Normalized Difference Vegetation Index' (NDVI), was used as a proxy of drought, based on the assumption that poorer vegetation growth was a result of water stress conditions[54]. The map shows that below average harvests were not recurrent in the main cropping areas in south and western parts of South Sudan.

Map 9 below represents the rainfall trends in the wet season (March to October) in South Sudan from 2010 to 2015 against the long term average through the Standardized Precipitation Index (SPI). The SPI is a standardised index reflecting the level of rainfall deficits compared to the long term average rainfall (30 years). Between 2010 and 2015, rainfall deficit was slightly more frequent in pastoral and agro-pastoral areas of Eastern Equatoria, in the Greater Upper Nile states (especially Jonglei and Upper Nile), and to a lesser extent in Western and Northern Bahr el Ghazal. Cropping areas from the green belt in Central and Western Equatoria registered localised areas with drier than normal conditions, especially in 2010 and 2012. As shown in Map 8, lower than average rainfall did not significantly affect harvests, except in Eastern Equatoria and a number of counties in the Greater Upper Nile region.

5.1.3.2 Epidemics – human, crop and livestock diseases

Animal and crop diseases

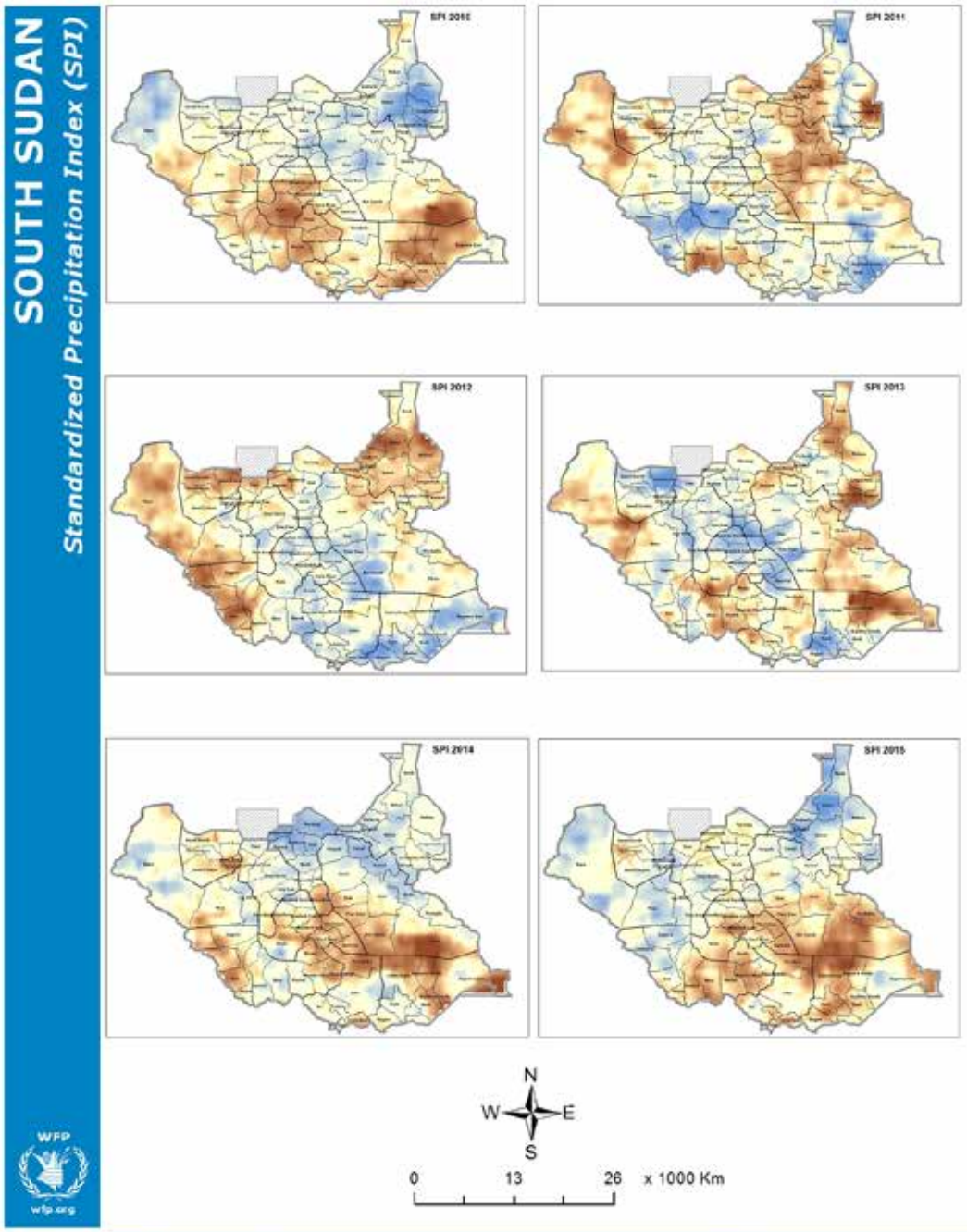
While there have been no large scale outbreaks of crop diseases in the last five years, as reported by the CFSAMs, these still pose localised threats to production and can be a key shock for households. The main crop diseases include smut in sorghum, mosaic disease in cassava, rosette virus and leaf spot disease in ground nuts. Crop pests are mostly a problem in October.

Similarly, while there were no major livestock disease outbreaks reported by the CFSAM reports from 2010 to 2015, localised outbreaks have been common and have caused significant livestock mortality. For example, one in five cattle are believed to die of disease[55]. Key livestock diseases include haemorrhagic septicaemia, contagious bovine pleuropneumonia, anthrax, peste des petits ruminants or PPR, Black Quarter, East Coast Fever, Sheep Pox, Newcastle Disease, Contagious Caprine Pleuropneumonia, Foot-and-Mouth Disease, lumpy-skin disease and the presence of internal and external parasites. The livestock diseases affecting pastoralists appear to be year-round. Local and national capacity to prevent, monitor, control and respond

54 A 20-year average (1994-2012) of NDVI during the growing seasons was created to act as a benchmark, and each year in the last five (i.e.2010–2014) was individually compared against the long-term average benchmark to determine the number of years when the growing seasons were significantly below the benchmark.

55 FAO in Emergencies: South Sudan. At http://www.fao.org/emergencies/countries/detail/en/c/147627/, accessed July 2015

Map 9: Standardized Precipitation Index (2010-2015)



– for example through a reliable supply of veterinary resources, a stable cold chain, vaccination crèches and quarantine centres, and animal health care knowledge and capacity at local level – is severely limited. This has threatened about 70 percent of pastoral households and two million animals. In states affected by the recent conflict, the risk of livestock disease outbreaks has been heightened as the cold chain system for vaccine storage and distribution has broken down, and non-traditional livestock movements has led to the intermingling of vaccinated and unvaccinated herds[56].

Human disease outbreaks

Sudden or acute outbreaks of diseases are a shock experienced by many households and communities across states and livelihood zones, limiting their capacity to fully exploit their livelihood potential and increasing exposure to food insecurity and malnutrition. Epidemics are distinct from the endemic morbidity or ongoing disease burden that is a key household *stressor (*see the following section). As a shock, disease outbreaks are underpinned by environmental factors (i.e. flooding) and socioeconomic ones (i.e. congestion of population living in unsanitary conditions, water contamination, lack of hygiene, awareness and preventive measures, lack of access to health services).

The ongoing conflict continues to drive IDPs to POC camps and towns, directly causing disease outbreaks. Sudden flare-ups of malaria, skin diseases and other infections are common. Outbreaks of measles are periodically investigated in Unity (Rubkona), Jonglei (Duk), and Upper Nile (Maban). An overall 392 suspected cases have been investigated across nine states since January 2015[57] which clearly indicates the extent of actual or suspected outbreaks. Cholera outbreaks (often viewed as a social under-development indicator) are a risk during the rainy season and in overpopulated semi-urban and urban areas (e.g. POC camps). These has been linked to the recent conflict - a cholera outbreak was declared in Juba in June 2015[58], and devastating outbreaks across the country occurred in 2014, some months after the conflict started[59]. Cholera remains a threat to public health and poses a risk of death for those affected, particularly people with low immune system due to malnutrition or HIV.

5.2 STRESSORS

Stressors are either long-term trends that undermine the potential of a given system and increase the vulnerability of the actors within it, or slow-onset hazards that develop and pass a 'tipping point' to become extreme events. By diminishing individual/household/community capacity to withstand shocks, and increasing the negative impacts of these shocks, stressors undermine resilience. This section lists key stressors that make households more vulnerable to shocks, by diverting valuable assets and resources required to cope with them and by depleting livelihood, food and general wellbeing. These include: endemic disease and morbidity; displacement pressures on host communities; limited basic infrastructure (roads and access to markets and services); limited access to quality and relevant education; poor access to water and sanitation; lack of social welfare; gender based violence; risks to children; social or cultural events; and low productive capacity and technology.

56 FAO in Emergencies: South Sudan. At http://www.fao.org/emergencies/countries/detail/en/c/147627/, accessed July 2015
57 WHO, 2015 – Situation Report #50
58 Al Jazeera News, 23 June 2015
59 In that outbreak an estimated 6,000 people across 16 counties were infected and 167 died.

Like the shocks described in the previous section, these stressors include ones typical of other countries in the region but also particular to South Sudan and made much more complex by the recent conflict.

The nature, scale and impact of stressors suggest multiple structural deprivations. Infrastructure and access to basic services[60] indicators were the lowest in the world before the crisis, and have worsened since. Stressors linked to lack of capacity include human disease and morbidity, poor roads, limited market access, low productive capacity and technology, youth unemployment and alienation, limited employment opportunities, and poor access to quality education, health care, water and sanitation and social welfare. In addition, there are stressors linked to the chronic vulnerabilities of a post-conflict scenario, in particular competition over natural resources caused by IDPs living in host communities or towns.

Other stressors depicted here are caused by a combination of contextual and historical factors. These include the pressure of social and cultural events that demand a heavy sacrifice of resources from households, critical levels of sexual and gender based violence, and high protection risks to children.

Data on stressors is primarily from the FSNMS as well as from the literature review and other sources. In the FSNMS rounds, households' perceptions of stressors three months prior to the survey were explored. Results show that the main stressors perceived by households vary among states and seasons. This sub-chapter presents trends of exposure to stressors by state based on seasonal average from October 2010 to February 2015. For Jonglei, Unity and Upper Nile data were not collected in February 2014 so average for February for these state especially for conflict, violence and lack of movements are underestimated

5.2.1 Endemic disease and morbidity, poor access to health services

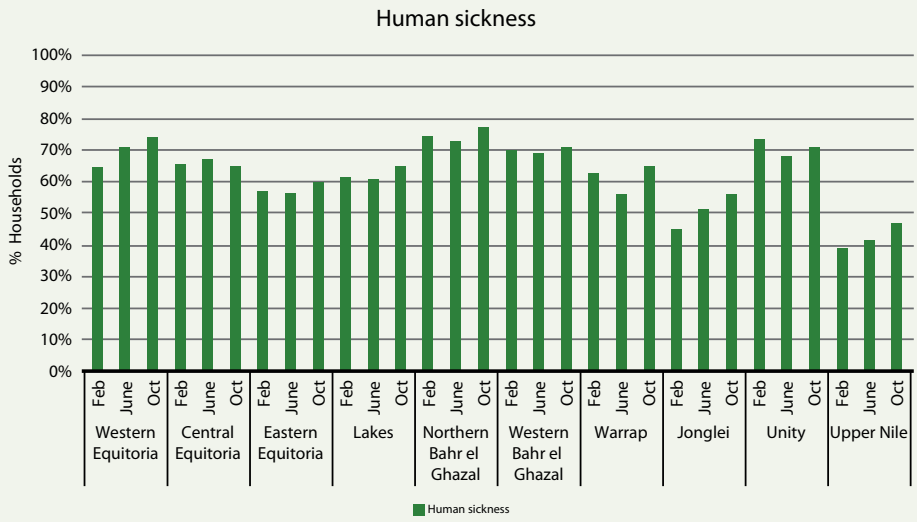
Around 60 percent of households reported human sickness as one of the main stressors experienced. While there are clearly seasonal patterns to specific diseases or ailments, Figure 13 shows disease as a major stressor affecting households throughout the year in all states.

The significance of human disease as a chronic stressor that diminishes a household's ability to withstand a shock was confirmed by secondary sources and underlined at the validation workshop in Juba. Physical and mental health is indispensable during hard times, while the absence of good health diverts valuable financial and non-financial resources that may be needed to cope.

Figure 14 shows the ten main causes of death, all of which are health related and many of which are communicable diseases (respiratory infections, HIV/AIDS, diarrhoea, malaria, meningitis and TB). These out-rank non-health causes, including those linked to insecurity that typically receive more attention and investment. They indicate the weak and limited health care system faced by most households (see below). Infant and child mortality is highlighted as premature birth complications cause 4.5 percent of all deaths in the country, and birth asphyxia and

60 International NGOs cover a large proportion of basic service provision: 85 percent according to ODI & Tearfund (2012). This indicates the capacity gap, but is also cited as a disincentive for Government to increase its role as provider or regulator of these services.

Figure 13: Households reporting human sickness (FSNMS 2010-2015)



birth trauma 3.3 percent[61]. With low levels of skilled attendance at birth, maternal and infant mortality rates are among the highest in the world: 730 mothers die per 100,000 live births[62], and 68 infants die per 1,000 live births[63]. While specific data was not available for this analysis, it is known that the recent conflict has overall worsened the burden of disease for households in Greater Upper Nile and other affected states.

Overall, life expectancy at birth is 55 years for men and 57 years for women[64]. Only 17 percent of children are fully immunised[65] and malnutrition remains above the emergency threshold[66]. Nationwide HIV/AIDS prevalence is estimated at 3 percent among pregnant women (UNICEF).

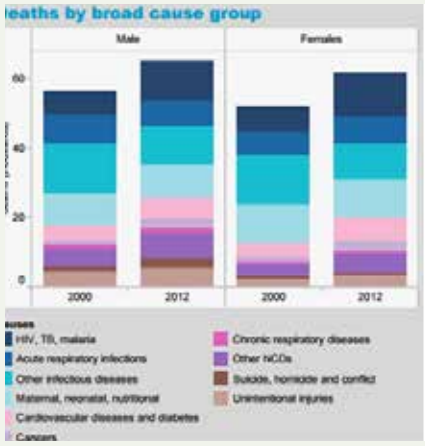
Negative impacts of ill health, beyond physical and psychological, are financial and livelihoods related. They include costs of treatment, transport to facilities, and opportunity costs (i.e. of not working). They also include the consequences of reduced ability to maintain a livelihood and earn an income.

Compounding the impact of a chronic disease burden, rural health facilities are often hard to reach, few in number, and of low capacity in terms of resources and infrastructure such as supply chains, storage and information systems. Urban facilities are also stretched to meet high needs, as well as being expensive and over-crowded for most people who access them. Across the country, the relative shortage of human resources is particularly acute, with WHO estimating that there is only one physician per 65,574 population and one midwife per 39,088

61 WHO, 2012
62 World Bank, 2014
63 CIA World Factbook
64 WHO, 2013
65 World Bank, 2014
66 The threshold for Global Acute Malnutrition (GAM) used to categorize 'emergency' is 15 percent - as per WHO crisis classification (WHO 2003, The Management of Nutrition in Major Emergencies).

Figure 14: Top 10 causes of death (WHO Statistical Profile – South Sudan)

Figure 15: Deaths by broad cause group (WHO Statistical Profile – South Sudan)



population[67]. There is inequity geographically, with Central Equatoria having the highest number of health workers, and higher numbers also in urban areas despite the majority of the population living in rural areas.

Endemic diseases pose a heavy burden on this already weak health system, especially given limited budgetary allocation (in 2014/15 total expenditure on health as a proportion of GDP was 4 percent[68]). The recent conflict-affected many health workers (and health facilities), further reducing the numbers as many were injured, killed or forced to flee[69].

5.2.2 Displacement pressures

Very high levels of displacement following the recent conflict have caused or exacerbated economic and social pressures for those who host displaced individuals or families, and who often have few resources themselves. The presence of a displaced person or returnee in a household was reported as a major stress by FSNMS respondents. In the event of a natural or non-natural hazard, the pressure on resources caused by additional and often non-working household members can make it significantly harder for a household to cope.

This stress is not abating, with new displacement continuing in the first half of 2015 as a response to ongoing conflict[70]. Many households or groups moved repeatedly either because of fighting or a lack of resources and assistance. The Greater Upper Nile states are worst affected but others were affected too, for example there were observed flash points in the Equatoria states and displacement in other locations to avoid military recruitment[71]. Protracted (and sometimes repeated) displacement, with impacts on host communities, is expected to continue beyond 2015 if the conflict continues and the peace deal negotiated between parties does not hold.

67 Health Strategic Plan (2011-2015) Government of South Sudan Ministry of Health, cited by WHO at: http://www.who.int/workforcealliance/countries/ssd/en/
68 UNDP, 2014
69 ICRC, 2014
70 Between January and April 2015 there was a 2 percent increase in the number of people displaced internally and a 7 percent increase in the number of South Sudanese who fled to neighbouring countries in search of protection. Source: South Sudan Protection Cluster report, May 2015.
71 Ibid

This stress is likely to be exacerbated by the **relative insecurity of land tenure.** In general, customary law governs use of land and other natural resources, with each ethnic group applying its own laws relating to land and land rights in its own territory. However, customary rules are not equitable (in particular they restrict women's access to land and property) and there is little clarity on how they overlap with the roles and responsibilities of formal state legislature governing land rights.

There are also concerns over government leasing of land to foreign and domestic companies for interests including biofuels, agriculture and forestry, as part of the state's new economic development initiatives attempting to diversify from reliance on oil revenue. These practices risk undermining food security by dispossessing people from land and natural resources indispensable to their daily livelihoods (half of the country's arable land is cultivated). They also risk causing conflict, given the high levels of inter-group violence and cattle raiding often sparked by disputes over grazing land and water. Often perceived as non-transparent, the leasing processes also risk worsening local-level lack of trust in elites and the state.

One important feature of the recent conflict's displacement is that the majority of those forcibly displaced moved to urban areas in search of security, better access to basic services and economic opportunities. Generally, little is known about displaced people's means of coping in the urban environment, their relationships with host communities and governance institutions, and their specific vulnerabilities as compared with other urban poor. Consequently, government as well as humanitarian and development actors struggle to meet the specific needs of this population.

Finally, the recent conflict also prompted a **widespread displacement of livestock**. Nomadic pastoralism is fundamental to the society and economy of rural areas; the wide scale disruption of traditional livestock migration routes, market dynamics and disease patterns has sparked fresh cycles of violence and impacted on social cohesion at a scale considered to be "tearing at the social, political, and economic fabric of South Sudan"[72].

5.2.3 Limited basic infrastructure – roads, access to markets and services

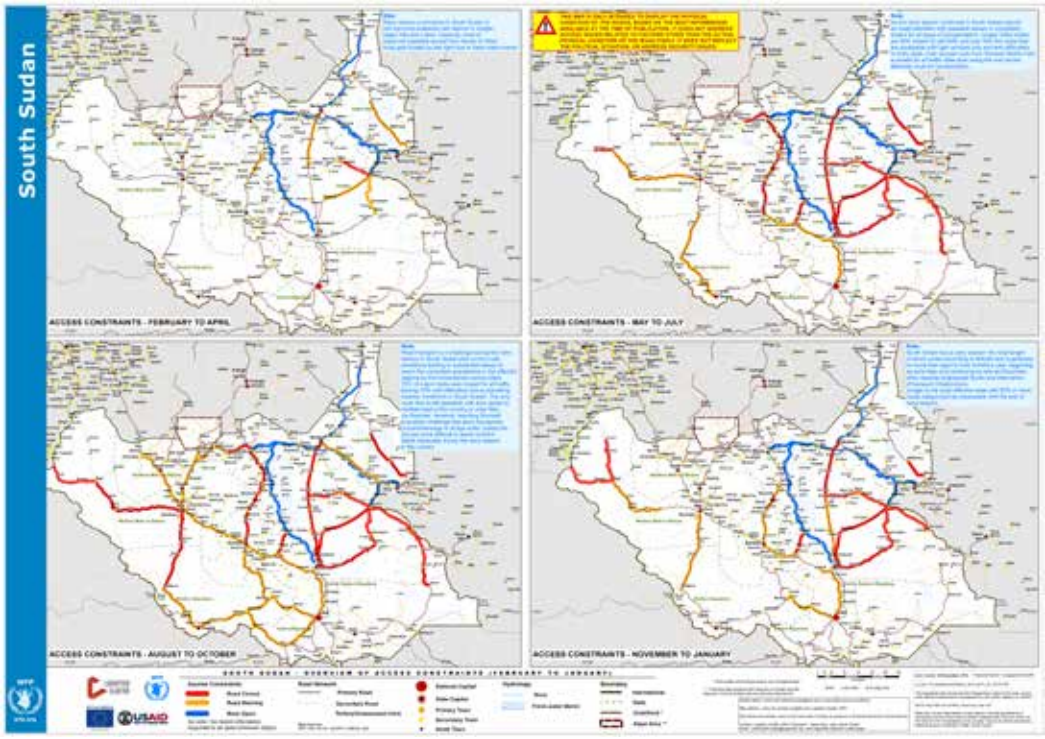
5.2.3.1 Roads

Challenges for road building and maintenance in South Sudan are significant. This vital infrastructure is inhibited by limited state budgets, an underdeveloped local construction sector (leading to high unit costs of construction), high prices for imported materials, poor governance, and conflict. Overall, the road network is inadequate and of poor quality. The country has an estimated 17,000 km of roads and most are gravel or earth; only 192 km of inter-urban roads are paved, which is less than 2 percent[73].

Climatic hazards further limit the functionality of the road network. South Sudan's rainy season can last up to nine months a year depending on the latitude. Each year, starting around mid-April, heavy rain causes widespread floods, destruction of roads and infrastructure, and limits access to markets and basic services. Map 10 shows road access constraints in the routes most important for movement of people and goods during different seasons, according to the Logistics Cluster. They indicate how difficult it is to move, particularly in the period from May to

72 FAO, in IRIN, January 2015
73 World Bank, 2015

Map 10: Overview of Access Constraints February to January (South Sudan Logistics Cluster)



October when the rainy season is at its peak. In this period, food availability is normally the major limiting factor to food security so inability to access markets is a serious constraint. Furthermore, the high prevalence of water borne human diseases in the same period is worsened by limited access to health facilities, again impacting households' and communities' livelihoods and food security. As shown in section 6, the prevalence of global acute malnutrition reaches the highest levels in most states between June and October.

In Greater Upper Nile States, a large percentage of roads remain closed from May to January, affecting households' capacity to access markets and basic services such as education and health. Jonglei is the most affected state, with at least 50 percent of roads categorised as impassable during the rainy season which lasts until January. At the peak of the flooding period, up to 90 percent of the roads in Jonglei are classified as impassable due to submergence, broken culverts and damaged bridges. Thus, in Jonglei and elsewhere (particularly northern states), at the peak of the rainy season river transport can be the main means of access for communities, traders, service providers and humanitarian actors.

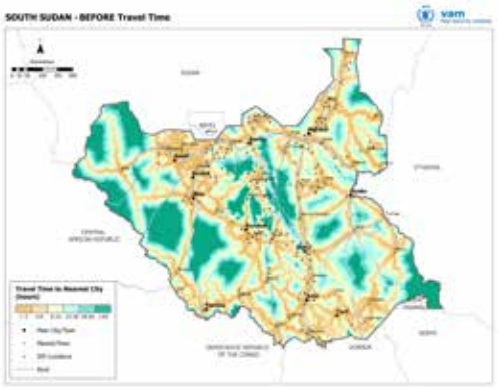
Roads from Western Equatoria and Western Bahr el Ghazal are severely affected by heavy rains in the second part of the long rainy season. The poor road network in these states reduces trade volumes to Juba and other main markets, which reduces access to food for vulnerable households dependent on markets for their food supply.

5.2.3.2 Markets

In South Sudan, access to markets is limited by poor road infrastructure and transport options as well as by seasonal constraints, particularly during the long rainy season and insecurity. Vast sections of the rural population are far from or unable to reach markets throughout most of the year.

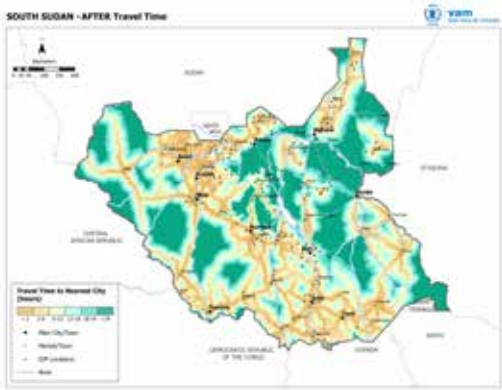
Recent conflict has disrupted infrastructure and drastically increased travel time, particularly in Greater Upper Nile states. Maps 11 and 12 illustrate accessibility prior to the recent conflict and Maps 13 and 14 show accessibility after the recent conflict, indicating the drastic increase in average travel time to markets in Greater Upper Nile states. Travel time and distance from each point on the map to the market locations is determined taking into account different travel speeds allowed by terrain and likely natural or man-made barriers. Areas in dark green on Maps 11 and 13 indicate greater accessibility problems, leading to chronic poverty and food insecurity as markets are less likely to function. Following the recent conflict, trade flows between different conflict-affected areas ceased. Markets appear isolated, reducing overall availability of goods, given the distance of entry ports from neighbouring countries and the decrease in trader demand. No major differences are observed in non-conflict-affected areas, while general remoteness from market centres is evident; approximate travel times for the majority of the country run into 24 hours or more.

Map 11: Travel times in South Sudan before the onset of the conflict (November, 2013)



Map 12: Market catchment areas in South Sudan before the onset of the conflict (November, 2013)

Map 13: Travel times in South Sudan after the onset of the conflict (October 2014)



Map 14: Catchment areas of main markets in South Sudan after the onset of the conflict (October 2014)

Map 12 shows market catchment areas. All locations that have a shorter travel time to one particular market than another are classified as one catchment area. The assumption is that people within this area naturally use the closest (in terms of time) market. In particular, the catchment area is characterised by the presence of a main market where trade is done from wholesalers to retailers (i.e. primary town markets), which is the reference for other smaller secondary markets at county level. Illustration of the catchment areas of market centres (i.e. the geographical coverage of the population who use them) indicates that remoteness from market centres is very significant in many places. This is significant in Rumbek, Malakal, Torit, Akobo and Aweil. The situation worsened due the recent conflict, which made some markets completely inaccessible. Comparison of the maps pre- and post-conflict shows how the catchment areas changed drastically in shape and size.

5.2.4 Limited access to quality education

Across all sectors, coverage of basic social services is low and suffers from deficiencies in institutional capacity, infrastructure and law and order. Education indicators are no exception. Limited access to education is a stressor to resilience building because quality education is known to not only contribute to improved livelihood opportunities but also life skills (and arguably connections and social capital) that strengthen the chances of overcoming a shock in individuals, their family and community.

Only 27 percent of people in rural areas can read and write. There is a marked gender disparity to this with 40 percent of men being literate compared to only 16 percent of women. The average overall literacy rate in urban areas is higher, at 50 percent[74]. Three out of four household heads have no formal education, an absence of human capital known to correlate with higher poverty[75]. Secondary education is found almost exclusively in urban areas and is mostly accomplished by men, with the highest educational attainment by urban men between 15 and 24 years of age[76].

Overall, education outcomes tend to be low and unequally distributed, with physical access to schools challenged by vast distances and poor connectivity in many parts of the rural areas. There are new capacity gaps in terms of funds, staff and facilities for school. According to UNICEF, close to 1.25 million children eligible to attend primary schools do not have access, with many existing schools not conducive to learning. Only 45 percent of the 3,349 primary schools have access to safe water, and 17 percent have adequate latrines for both girls and boys. Only 13 percent of primary schools provide the full complement of grades 1 to 8 and the qualified teacher to pupil ratio is 1:117[77].

Furthermore, education in many states suffered as a direct consequence of the recent conflict. According to UNICEF, an estimated 400,000 children were forced out of school because of the conflict, with some of these dropping out for good. Badly affected states saw school infrastructure damaged or destroyed and teachers fleeing (or killed), interrupting education for many children.

74 World Bank, 2015 using Census, 2008 and NBHS, 2009
75 Ibid
76 World Bank, 2014b
77 UNICEF 2015

In conflict and non-conflict contexts of all states, there is a wide gender disparity when it comes to education access and outcomes. Girls are less likely to be enrolled in both primary and secondary school, and less likely to remain in school or graduate to higher levels. This is partly because of early marriage of girls, and also because of fundamentally different socio-cultural expectations in a country where levels of gender inequity are among the worst in the world.

5.2.5 Poor access to water and sanitation

Access to water and sanitation, like other basic social services, is poor for many households. Large deficits in water supply and sanitation coverage reflect decades of insecurity and under-investment as well as challenges linked to vast rural areas and extreme climatic conditions, including periodic droughts and flooding. At all times this contributes to vulnerability by driving malnutrition and disease levels or by affecting crop and animal productivity. When households are affected by one major shock – such as high food prices, conflict, drought, flooding or disease outbreaks – an additional lack of access to safe water and sanitation easily worsens livelihood, food and nutrition security.

South Sudan has substantial water resources that are unevenly distributed and vary drastically between years depending on climatic conditions. Water projects struggle to overcome complex hydrogeology and difficulties in accessing remote rural areas, particularly during the rainy season. An estimated one-third of water points are non-functional due to weak operation and maintenance[78]. Many rural households dig shallow wells or use surface water, while the vast majority of those with improved access (rural or urban) are using boreholes.

Overall, while there is variation across states, national averages for water and sanitation indicators are among the lowest in the world. Data from 2010 indicates only 55 percent of the population have access to improved drinking water sources and 80 percent have no access to a toilet facility. An estimated 38 percent of the population walks for more than 30 minutes to reach drinking water[79]. The access situation is believed not to have improved and may have worsened in conflict-affected states because of displacement and damage to Water, Sanitation and Hygiene (WASH) facilities.

Most surveys reveal that sanitation is considered a low priority for both rural and urban households, and this correlates with high levels of malnutrition and communicable diseases (including diarrhoea, typically the highest cause of morbidity alongside malaria and cholera). A high proportion of the population does not practice good hygiene. Inadequate disposal of human excreta and poor personal hygiene is cause for a range of diseases including acute watery diarrhoea and kala azar.

Diarrheal prevalence is high, with over 30 percent of mothers reporting this affecting their children. Cholera is endemic in South Sudan, as mentioned in the previous section on disease outbreaks. Furthermore, South Sudan is the worst-affected of four countries worldwide still struggling with the eradication of Guinea worm, with 77 cases reported in 2014[80].

78 ODI/Tearfund 2012
79 NBS, 2010, cited in ODI/Tearfund 2012
80 UNICEF

Water insecurity is thought not just to increase vulnerability to disease and malnutrition, but also to act as a deterrent to school attendance. Availability of water and sanitation facilities in schools are 49 percent and 51.7 percent respectively[81].

With over 1.6 million people internally displaced due to current conflict, the water supply in areas where IDPs settled are being over-utilised, having a negative impact on surface and ground water resources in these areas.

Finally, lack of access to water, especially for the predominantly pastoral and agro-pastoral population, increases the work burden for those collecting it (particularly women). It also increases the likelihood of migration during the dry season in search of water, migration typically done by the entire household but often with considerable protection risks (e.g. snake bites, abduction) for women and children and possibly also conflict or insecurity risks.

With far-reaching considerations, lack of access to water and sanitation is a stressor that significantly inhibits the ability of households to withstand the range of contextual shocks and their negative impacts.

5.2.6 Relative lack of social welfare/protection

Social welfare is typically designed to protect vulnerable sections of society including the elderly, disabled, displaced, orphans, widows, and those living in poverty. A limited or non-functioning social welfare system indicates that in normal times the vulnerabilities of these groups are likely to be sustained and entrenched, and in times of shock they may increase and possible reach overwhelming levels.

There is a relative lack of social welfare linked to longer-term development to reduce chronic vulnerabilities in the country. State efforts to implement social protection programming in the National Development Plan's Social Development Pillar and the National Social Protection Policy Framework of the Ministry of Gender and Child and Social Welfare have been somewhat de-railed by conflict and budgetary cuts worsened by the oil crisis. Non-state actors have implemented small-scale cash transfer programming for vulnerable individuals and households, including IDPs and refugees.

Non-contributory Social Safety Nets (SSN) are the predominant kind of formal safety nets intended to reduce poverty levels and increase household food consumption. Just before the outbreak of the recent conflict, food assistance accounted for approximately 98 percent of total SSN expenditure. Seventy percent of SSN beneficiaries were reached through emergency general food distributions, 14 percent through school feeding, and 15 percent through Cash for Work and Food for Work. Just 0.3 percent of all SSN beneficiaries were reached by unconditional cash transfers[82]. While these figures have changed slightly since reported in 2013, non-food safety nets (i.e. cash) remain the minority of SSN assistance intended to reduce poverty and support resilience in South Sudan, not least because of the outbreak of the recent conflict,.

Effective social protection is particularly important in the context of conflict, which 1) disproportionately affects the most vulnerable and puts stress on their systems of coping; and

81 SSCCSE, 2010)
82 World Bank 2013

2) displace large populations, increase number of orphans, widows and people with physical and psychosocial limitations. A general lack of formal social protection in the fragile context of risks leave many vulnerable or conflict-affected groups at risk of deepened or new poverty that further worsens their exposure to the impacts of future shocks.

5.2.7 Gender based violence (GBV)[83]

GBV has major impacts on the socio-economic wellbeing of households and communities, as well as being a major risk factor in terms of their resilience to food insecurity. In South Sudan, the vast majority of women and girls will survive at least one form of GBV — e.g. rape; sexual assault; physical assault; forced/early marriage; denial of resources, opportunities or services; or psychological/emotional abuse. Many categories of GBV are pervasive and engrained in the fabric of society. All tribes and geographic regions have some differences in terms of prevalence, but the thread of GBV sadly runs throughout the country, with bride price as a cornerstone of the nation's economy.[84] GBV is even more severe and widespread during a humanitarian crises, such as in South Sudan, where state and community social structures are disrupted and agriculture fails to ensure food and livelihood security of populations. Such circumstances may lead women and girls to engage in sexual behaviours (e.g. sex work for food rations, safe passage and access to basic goods) that can expose them to higher risk of GBV. Orphaned and other groups of vulnerable children, like girls and demobilized child soldiers, are an especially affected group within populations of humanitarian concern, due to their lack of sources of livelihoods, knowledge and skills, and thus their dependence on others. Additionally, gender inequality, including limited access and control over land, water and other productive resources, lack of access to education and health services, food insecurity, conflict and displacement continue to fuel the vicious cycle of both GBV and HIV. GBV and food insecurity also contribute directly and indirectly to people's vulnerability to HIV and their ability to cope with the infection. In the non-conflict affected states, women and girls are disproportionately affected by poverty in comparison to men and boys, which underlines women's lack of access to resources, participation in decision making and gender inequality more generally.[85]

In addition to GBV, various reports (UNMISS, HRW, AU and UN Security Council Resolutions) indicate that high levels of Sexual and Gender Based Violence (SGBV)[86] characterise the current crisis; that it has significantly increased the vulnerability of women and girls alike. They have been killed, raped and harassed when fleeing the fighting and crossing military frontlines.[87] Rape is frequently used as a 'weapon of war'. In May 2015, the South Sudan Protection Cluster cited "increasing reports of sexual harassment, castration, sexual exploitation, abduction and survival sex during the reporting period". Factors driving increased SGBV in conflict-affected areas include the presence of armed forces or groups, displacement and unsafe living conditions, lack of protection mechanisms in communities, and lack of food and other items (that force women to resort to risky coping mechanisms). Finally, there are limited services for SGBV survivors and these are mostly concentrated in urban centres. The current conflict has disrupted access to

83 Gender-based violence (GBV) is an umbrella term for any harmful act that is perpetrated against a person's will and that is based on socially ascribed (i.e. gender) differences between males and females. It includes acts that inflict physical, sexual or mental harm or suffering, threats of such acts, coercion, and other deprivations of liberty. These acts can occur in public or in private. (IASC GBV Guidelines 2015)?

84 Care International, May 2014.

85 Care International, May 2014: 6.

86 UNHCR defines sexual and gender based violence (SGBV) as including "rape, attempted rape, sodomy, sexual abuse, sexual harassment, sexual exploitation, incest, statutory rape and forced prostitution".

87 Human Rights Watch Report 2014.

services including medical care and psychosocial support, but also to justice services which have long been inadequate (including limited legislation around the rights of SGBV victims). In this context, the range of negative consequences of SGBV typically goes unaddressed.

5.2.8 Risks to children

Children are South Sudan's future and represent the next generation of economic and human capital. Risks faced by children today erode the resilience of tomorrow's communities. In South Sudan, children face a multitude of risks including abduction, early marriage, SGBV, recruitment into armed groups, violence, separation from families, and landmines or unexploded ordinance. Decades of insecurity and upheaval in many areas are believed to have damaged traditional social structures and weakened justice mechanisms, leaving children highly vulnerable to protection risks. The vulnerability of many orphaned children in South Sudan[88]has increased further.

Since the outbreak of the recent conflict, an estimated 750,000 children have been internally displaced and more than 320,000 forced to flee into neighbouring countries as refugees, causing major family separation[89]. Some 3,800 children have been registered as separated from their families. Only 11 percent of children needing family reunification support have indeed been reunited with their relatives[90]. An estimated 400,000 children have been forced out of schools, which were taken over by the military or other armed groups. A total of 12,000 schools are being used by armed forces and groups[91]. Displaced children are particularly vulnerable to the psychosocial stress, family separation, physical and sexual violence and recruitment into armed groups. Children (and others) living with disabilities face worsened and specific risks in relation to these and other shocks.

Beyond conflict, floods are also known to increase children risks to communicable diseases, and threaten access to education and basic social services.

Without proper delivery of basic social infrastructure and services, children are denied the chance to grow as healthy and educated persons who could reach their potential and provide for themselves and their communities.

5.2.9 Social or cultural events

Events such as weddings, birth and naming ceremonies, initiations, funerals and other ritual ceremonies were described as a key stress by informants of the FSNMS survey. While such events strengthen ties between families and communities, their high costs are a stressor. Households are expected to produce or purchase large quantities of livestock[92], sorghum beer, food, cash and other items for weddings or other events held by relatives and/or community members. For less well-off households, this can lead to immediate household food shortages, sometimes for a prolonged period. For many households, this leads to debt accumulation at a high cost, as access to formal credit is very limited.

88 Since South Sudan is a relatively young state, accurate orphan statistics do not yet exist. However, both Sudan and South Sudan taken together are believed to be home to around 2 million orphaned children (SOS Children's Villages). The vast majority of them have been orphaned as a result of extreme poverty, conflict and HIV/AIDS.

89 South Sudan Protection Cluster report, May 2015

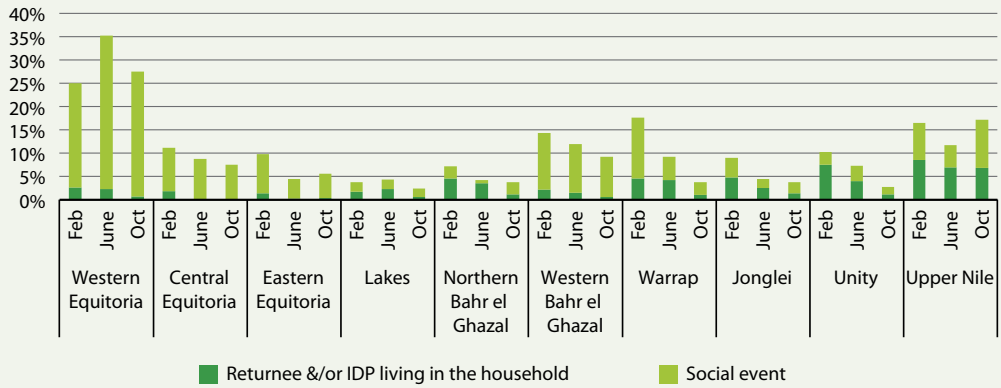
90 UN 2104, cited in World Bank 2015

91 UNICEF 2014

92 While key ritual events differ by tribe or group, for most groups in South Sudan livestock (and in particular cattle) represent traditional wealth. Cattle are the core component of bride wealth for most groups in South Sudan

These events deplete the resources necessary for short-term coping and/or longer-term strategies to withstand and adapt to shocks if they occur. Although social events can be tightly linked to certain seasons, the stress was not reported as seasonal. Figure 16 shows the percentage of households in different states, and in different months, who reported this stress. Most strikingly, households in Western Equatoria reported social events as a stress, with one third affected in June (FSNMS).

Figure 16: Perceived stressors for households (FSNMS 2010-2015)



5.2.10 Low productive capacity and technology

Many agro-pastoralists in rural areas are constrained by limited knowledge and skills for productive livelihoods. This is worsened by limited agricultural services, infrastructure and inputs and little or no access to credit. In addition there is a relative lack of water reservoirs, irrigation systems, storage and flood-proofed infrastructure including dykes. These factors leave many households and communities reliant on low technology and rain fed crop production, susceptible to natural hazards such as drought, flooding or outbreaks of crop and animal diseases affecting productivity. This constrains government efforts to strengthen the economy through agriculture development and reduce oil dependency. Low productive capacity also exposes households to shocks that impact their food and livelihood security.

There has been an uptake of animal traction in some states but progress has been slow due to non-availability of spare parts and maintenance knowledge for ploughs and other components. Most households also have little access to quality, improved seeds and other planting materials that would enhance yields of staple crops like sorghum. This is particularly pronounced in areas where displacement due to conflict has forced farmers to reduce planted acreage, or to share available arable land in less-viable, smaller portions.

Low capacity and limited technology is a particular stress for 'new cultivators' and displaced cultivators striving to diversify livelihoods including farming.

In a country where the majority of the population depends on the pastoral economy, poor access to animal health care, extension services, skills and knowledge is a constraint to increased production. The relative remoteness of many rural communities, poor infrastructure, and droughts and flooding all compound this. Conflict and displacement exacerbates the situation

as it can negatively affect cropping, distort migration patterns of pastoralists, and alter disease patterns.

5.2.11 Limited Employment Opportunities

The employment market is constrained for most people in South Sudan. The majority of households depend on low-productivity activities linked to non-wage agriculture and pastoralism. A high proportion of households (around 80 percent) engage in at least two income sources, while around 40 percent have access to three or more. However this diversification of livelihoods does not translate into overall stability - FSNMS data shows that in over 50 percent of households (up to 70 percent in some rounds), the second and third source of income is sale of natural resources and sale of local beer, both typically fragile and small-scale activities. Formal wage employment is extremely limited, and mainly dominated by the public sector in urban areas. Furthermore, urban employment has a marked gender disparity: 70 percent of women in towns are unemployed, compared with 50 percent of men[93].

While quality and relevant education decreases the risk of unemployment, high levels of the population do not have access to this, manifesting in a lack of skills and experience deficiencies among active jobseekers. The other key constraint in terms of employment has been identified as poor access to finance or foreign currency. A World Bank report on the private sector and job creation[94] found the following: more than 75 percent of businesses identified 'access to finance' as the most significant investment climate constraint; only 23 percent of businesses had borrowed money in the past five years; and only 20 percent of those had been able to borrow from commercial banks. Lending remains largely through informal networks of family and friends. Constraints on capital and financing restrict hiring capacities for employers, and limit job creation.

As a stress, limited employment opportunities make individuals and households less able to earn income to overcome a shock, and less able to adapt their sources of income or livelihood strategies to avoid future shocks. This can be particularly critical in the face of natural shocks such as drought, flooding or animal and crop diseases. It is also likely that the relative lack of employment opportunities for youth increases the likelihood and impact of shocks related to insecurity and conflict.

In particular, over 70 percent of the population is under 30 years old[95], and more than half of those aged 15-24 are unemployed[96]. The very high youth unemployment rate is attributed to a range of factors including a lack of relevant marketable skills provided by education, insufficient labour demand, and high competition from more skilled or experienced workers from neighbouring countries (or diaspora returnees). Large numbers of rural youth have migrated to towns due to changing economic aspirations linked to schooling and to rapid changes in the agro-pastoral economy of South Sudan, as in most other rural areas in the region. This proportion of unemployed youth reflects a significant labour market failure, and one with implications not just for poverty and the economy but also for society and its stability

93 World Bank 2014c
94 Ibid
95 Government of Republic of South Sudan. 2013. National Social Protection Policy Framework
96 World Bank 2014c

in terms of crime and social cohesion[97]. Criminal and violent youth in towns of South Sudan are widely cited, with this blamed on their exposure to near-continuous conflict their whole lives and on their need to resort to negative coping strategies given the limits of their education and opportunities.

The disaffection of South Sudan's young men in particular has been attributed to growing tensions with traditional authorities as well as limited opportunities to earn a living. It is considered that young adults of both sexes are largely excluded from power and politics, including in local communities and throughout the current conflict in which they have been both perpetrators and victims of violence[98]. Limited inclusion in civil society and constructive community-level mechanisms cause additional alienation for many of South Sudan's youth.

Arguably the resilience of future contexts and generations cannot be built or supported without building and supporting today's youth, especially in a context like South Sudan. Unemployment levels of youth are an indicator not only of market failure but also social stability, a key determinant of resilience at community and even national level. Evidence of the disaffection of youth further makes this point.

97 Ibid
98 Human Rights Watch 2014; World Bank 2015

Chapter 6: Food insecurity and malnutrition trends

Food security and nutrition are considered in this analysis as 'resilience outcomes', measures of wellbeing which, in resilient households, are sustained despite shocks and stresses. This section looks at recent trends in food insecurity and malnutrition for South Sudan and how these vary across seasons, states, and political conditions including insecurity.

Overall, data shows that food insecurity and malnutrition in South Sudan are highly seasonal and are badly influenced by recurrent and frequent shocks, conflict being the most recent occurrence. For example, conflict-affected states have seen drastically lower productivity, whose negative impact on food insecurity has been alleviated through higher levels of food assistance. Similarly, established market dependency for staple foods has been affected by widespread disruption of markets well beyond the three most conflict-affected states. However, it is important to note that other shocks had a severe impact – for example, 2012 data reveals a severe impact of the closure of South Sudan–Sudan border on the markets. Shocks tends to compound effects of other shocks, and their impacts need to be seen in their entirety and not as individual and unrelated. The following sections examine trends, as well as causes, for both food insecurity and child malnutrition, using data from FSNMS and other sources.

DEFINING FOOD INSECURITY AND MALNUTRITION IN THE TREND ANALYSIS

In this analysis, food and nutrition security are defined in alignment with global definitions* as well as with in-country classifications, particularly those that apply to the data used.

⇒ The **food security** classification used in the latest FSNMS rounds is based on **food consumption** indicators and **coping capacity** (using indicators measuring **economic vulnerability** and **asset depletion**), measured at household level.

Based on Food Consumption Score, share of food expenditure, livelihood coping strategies, sustainability and reliability of income sources available at household level (used up to round 12, end of 2013) and access to food, households are classified into four categories: severely food insecure, moderately food insecure, marginally food secure and food secure. The first two categories together are referred to as 'food insecure'.

⇒ **Anthropometric measures** were used as a proxy for **child malnutrition**. Children's MUAC was used as a proxy of malnutrition until October 2013, and Stunting, Wasting and Underweight data was used in the 2014 FSNMS rounds.

** Food security exists when "all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life"* – **World Food Summit Plan of Action, 1996, para. 1.**

** Nutrition security exists when "all people at all times consume food of sufficient quantity and quality in terms of variety, diversity, nutrient content and safety to meet their dietary needs and food preferences for an active and healthy life, coupled with a sanitary environment, adequate health, education and care"* – **FAO/AGN, March 2012**

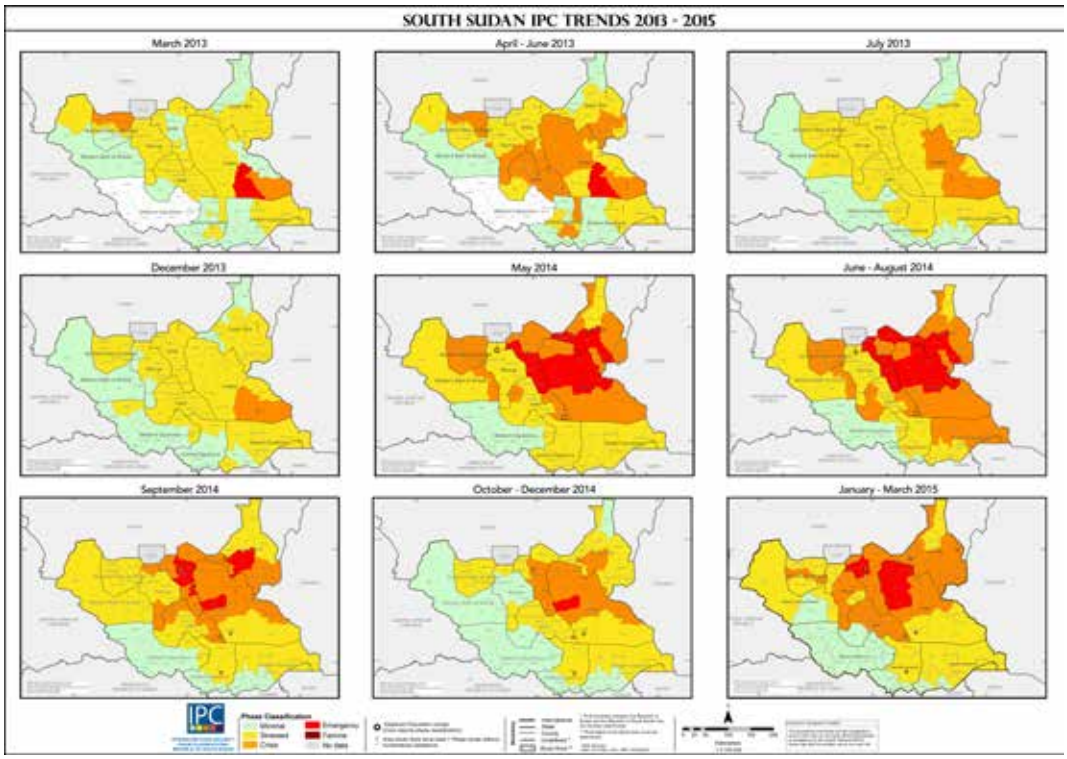
More details about the methodology used to define households that are severely and moderately food insecure can be found at http://resources.vam.wfp.org/CARI or please check chapter xx for methodological reference

6.1 FOOD INSECURITY TRENDS AND CAUSES

6.1.1 IPC classifications

IPC trend analysis in the past three years show how food security in South Sudan deteriorated after December 2013. Between May 2014 and May 2015, there has been a 31 percent increase in populations facing food security 'Crisis' (IPC Phase 3) and food security 'Emergency' (IPC Phase 4). An increase of 27 percent was also observed in the population in these phases between September 2014 and September 2015. This shows that since the conflict started, there has been increased vulnerability to food insecurity. It has been exacerbated by reduced food and cash crop production in areas worst affected by the conflict, increased food commodity prices limiting access through markets, and disrupted livelihoods patterns including livestock movement resulting in limited milk, meat and blood consumption. IPC classifications also showed that previously food sufficient regions became more food insecure, with implications for short term wellbeing and longer term development.

Map 15: South Sudan IPC Trends 2013 - 2015

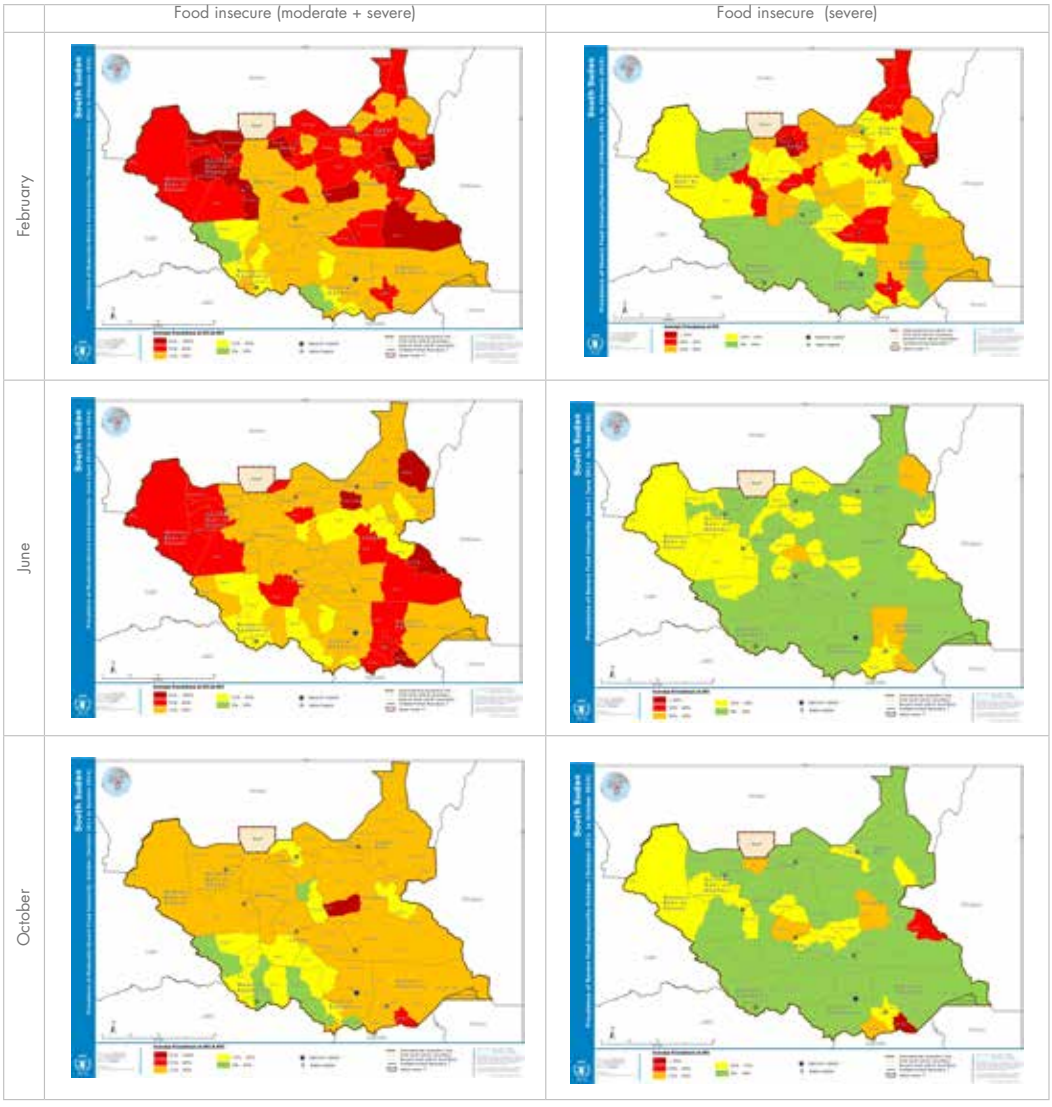


6.1.2 Food security trends according to season and states

South Sudan's lean season is considered at its peak in June or July, just before the first season harvest, which normally takes place in August in southern states and slightly later in the north, despite the fact that some early green crop consumption might start in the north in August. Data from the main cropping areas, namely the Greater Equatoria region, confirm the seasonal trend of food insecurity.

However, in other areas, the FSNMS data over five years showed that households surveyed considered February to be most critical in terms of food insecurity. This reflects the limits of the survey, which is not asked every month but rather three times a year. The impact of severe shocks that happened between December and February (i.e. the closure of the border with Sudan in 2012 and the beginning of the conflict in 2013) partially contributed to such outcomes. At the same time, for many agro-pastoralist households this could also be linked to the depletion of stocks of their own supply of the staple food sorghum, typically harvested at the end of the previous year, between October and December. As a result, their dependence on markets for the supply of key staples increases after this period, whilst their purchasing power and economic access to food enters a seasonal downward trend. Food consumption being one of the main indicators for food security classification, the constraints in accessing food in the first quarter of the year can help explain the trends shown in Map 16 below, which compiles seasonal trends over the five reference years 2010-2015. As dependence on markets increases

Map 16: Seasonal prevalence of food insecurity (FSNMS 2010 - 2015)



towards the mid-year lean season, both for commonly consumed commodities and the rest of the food basket, accessibility and market integration decreases due to seasonal rains and more recently due to conflict.

In several counties, the prevalence of food insecurity (severe plus moderate) in February is above 60 percent, mainly in the conflict-affected Greater Upper Nile states and Western and Northern Bahr el Ghazal.

In the areas with severe food insecurity (which are also more conflict-affected), variation between June and October is relatively low compared with elsewhere, while February remains critical. This could be attributed to the chronic nature of the conflict, a year-round condition that has reduced harvested areas and crop production, plus access to trade, markets and services for all households.

In several cropping areas including Western Equatoria, Central Equatoria and Northern Bahr el Ghazal, food insecurity increases seasonably from February as the lean season progresses in June. This raises further concerns over the high prevalence of food insecurity in February, notably in the Greater Upper Nile states, which is mainly due to conflict that impedes physical and economic access to food.

It is worth noting here that food insecurity at household, community and higher levels is not only a consequence of conflict, but can also cause and drive conflicts[99]. This detrimental 'cycle' of food insecurity and conflict is thought to exist in parts of Greater Upper Nile states, and to be further contributing to poverty and reduced resilience and social cohesion.

Finally, it is important to highlight the chronic nature of food insecurity in Western Bahr el Ghazal, one of the main cropping areas. Infrastructural gaps and low market integration are major constraints for the country that may explain this trend.

After a period of relative ease in 2013, food insecurity deteriorated in all states immediately after the beginning of the conflict in December 2013. The reasons for this (many of which are detailed in the previous section on shocks and stressors) include the direct and indirect impacts of conflict, reduced productivity due to non-planting, lack of labour inputs and reduced herd mobility, inability to access markets and services, high food prices and poverty.

Figures 17, 18 and 19 show that the levels of food insecurity[100] in February 2014 were significantly higher than the seasonal average in the states of Western Equatoria, Central Equatoria, Northern Bahr el Ghazal, Warrap, Unity, Lakes and Jonglei.

In Greater Bahr el Ghazal and Greater Upper Nile, food insecurity was higher in February 2015 than in the previous July, most likely due to the impact of the crisis on the 2014 agricultural season and more broadly on the disruption of livelihoods in these states. The percentage of food insecure households in Warrap had also increased by this date, reaching almost 60 percent. In some states however, food insecurity decreased. For example in Northern and Western Bahr el Ghazal the percentage of food insecure in February 2015 was almost half the seasonal average,

99 Breisinger at al 2014.

100 According to the following criteria: Food Consumption Score, share of food expenditure, livelihood coping strategies, access to food.

Figure 17: Food insecurity trends and seasonal average in Greater Equatoria region (2010 – 2015)

Greater Equatoria

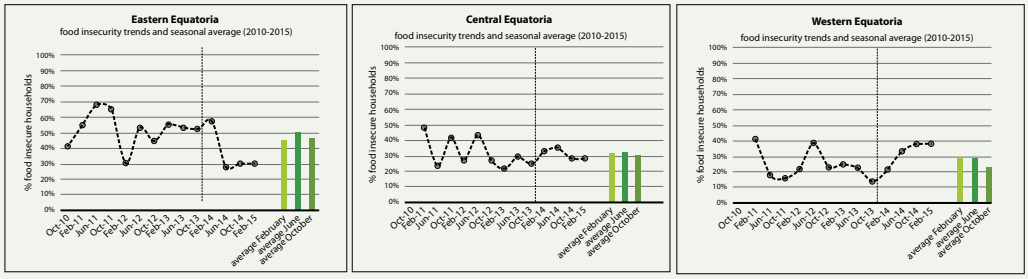


Figure 18: Food insecurity trends and seasonal average in Greater Bahr el Ghazal region (FSNMS 2010 - 2015)

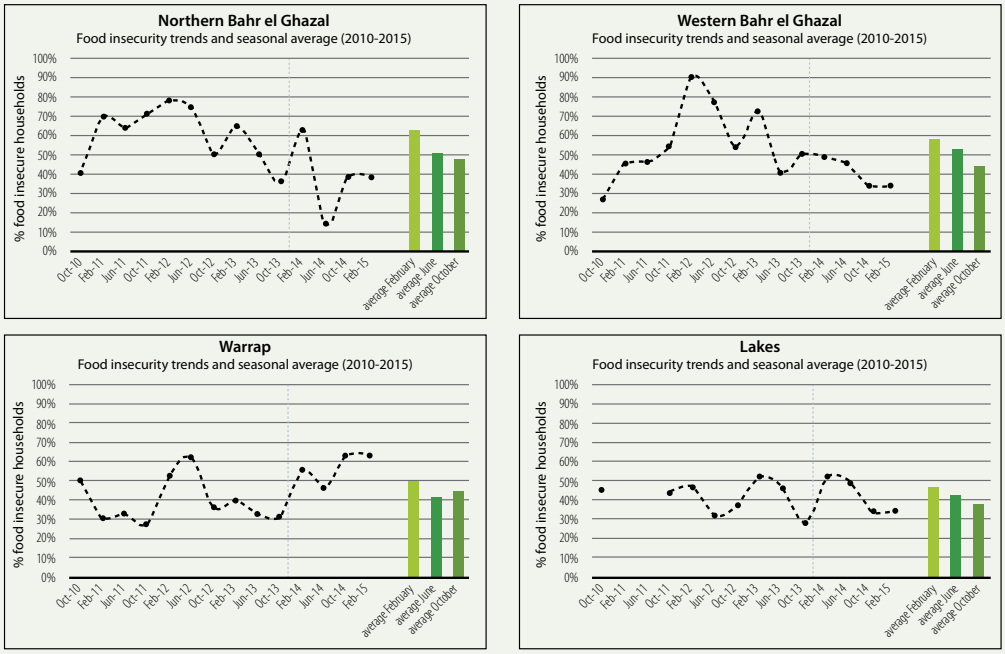
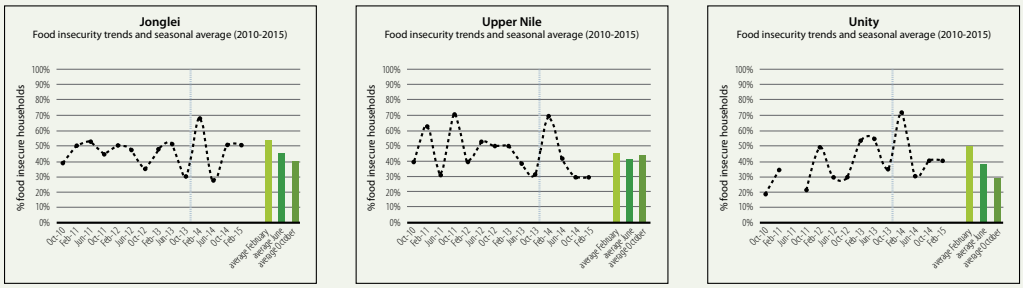


Figure 19: Food insecurity trends and seasonal average in Greater Upper Nile region (FSNMS 2010 - 2015)



confirming a significant improvement in food security in the past 5 years. Lakes state also saw improvement in February 2015. This improvement can most likely be attributed to average to above average production in this period in non-conflict affected states with relatively better functional markets.

In Jonglei and Unity, the food security situation is still critical, while households in similarly conflict-affected Upper Nile state have some signs indicating food security in 2014. This may be a reflection of some improved market infrastructure and trade routes, as well as improvements in production in Upper Nile state, from the lowest in the previous season due to favourable rainfall and which enhanced also the replenishment of and water sources for farming, animal husbandry and fishing. Food assistance levels went from negligible to 25 percent of the state's population in 2015, and in doing so decreased the heretofore high dependence on market supplies. Dependence on market supplies had been estimated at consistently above 80 percent since February 2011, in all seasons, and then fell to 46-54 percent in early 2015[101].

While to a lesser degree than in Upper Nile, market dependence in Jonglei and Unity also decreased due to food assistance linked to the outbreak of conflict. For example, in Jonglei the market contribution to the average household's food basket fell from over 70 percent in June 2013 to under 50 percent in June 2014, in line with corresponding food assistance increases. Food assistance has also contributed a major source of pulses, oils and fats in conflict-affected states.

This increase in food assistance – and its knock-on effects on market dependence and food security - is seen only in the conflict-affected Greater Upper Nile states. In the neighbouring states of Lakes and Warrap, as elsewhere, food assistance remained low and food insecurity relatively high.

6.1.3 Main causes of food insecurity

In any context, key causes of food insecurity are: **1) limited availability of food; 2) limited accessibility of food; 3) poor utilisation of food;** and **4) instability of food supplies**. These factors are contextualised here for South Sudan, and explored in relation to its recent conflict.

Food availability

In most of South Sudan, sorghum is produced at the household level as a staple food. The duration of own food stocks of a cultivating household, especially one in a unimodal cropping areas in central or northern South Sudan, depends on several factors, including wealth ranking: for middle and better off households, food stocks may last six months while for lower income households they may only last three. After the supply from the end-year harvest in the unimodal areas has run out, households rely almost entirely on markets for sorghum along with most other food basket items[102]. Although less frequently, a similar scenario is often observed in the Green Belt bimodal areas before the onset of the second harvest around August, where households whose stocks have been depleted rely on markets for food supply.

In the most recent growing season, in 2014, there was early and abundant rain but despite the favourable weather conditions, the total planted area for the whole country was 17 percent

101 CFSAM 2015
102 CFSAM, 2015

lower than the previous year. As explored in section 4.2.2, this was largely due to a two-third reduction in planted area in Greater Upper Nile states, where mass displacement caused by the recent conflict prevented planting and resulted in limited productivity on a large scale. Poor harvests were combined with looting of food stocks in many areas, particularly in the early stages of the conflict thus eroding the 2013 stocks and further straining availability and diversity of food.

Currently, the cereal deficit for South Sudan is approximately 250,000 tonnes[103]. While this is an improvement on last year's deficit of around 400,000 tonnes, there is still wide disparity between states. As described in section 4.2.2, in Greater Upper Nile states the deficit for 2015 increased dramatically (from 222,000 to 307,000 tonnes) due to the conflict's impact on supplies, labour, trade and markets. Other states had better scenarios in 2015: an overall surplus in Greater Equatoria, and 2014's deficit reduced by two-thirds in Greater Bahr el Ghazal, Warrap and Lakes states.

BOX 3. FOOD ASSISTANCE RECEIVED FROM HOUSEHOLDS

The majority of households in Greater Upper Nile states received assistance in October and March 2015. In Upper Nile state in March 2015 there was a 25 percent drop in the numbers receiving assistance, mainly due to insecurity and lack of humanitarian access, which is still an issue.

The majority of assistance received is food, especially in Greater Upper Nile states, as well as in Lakes, Warrap and Northern Bahr el Ghazal where assistance is less significant (general assistance is received by less than 10 percent of the population).

Of all households that received food assistance in 2015, 80 percent received general food distribution, 16 percent supplementary feeding, and 4 percent food through asset creation programmes. Female-headed households were the highest recipients of general food distribution, at 83 percent, while male-headed households were more likely to receive food through asset creation programmes.

The table gives proportions of those in each state who reported receiving assistance in the three months before the survey, and the proportion of these who received this as food assistance.

	Proportion of households receiving assistance	Proportion of those who received food assistance	Proportion of households receiving assistance	Proportion of those who received food assistance	Proportion of households receiving assistance	Proportion of those who received food assistance
	Jul-14		Oct-14		Mar-15	
Central Equatoria	14%	29%	26%	21%	7%	71%
Eastern Equatoria	20%	35%	21%	16%	2%	25%
Western Equatoria	7%	39%	40%	12%	11%	55%
Western Bahr el Ghazal	33%	34%	18%	10%	17%	33%
Northern Bahr el Ghazal	16%	89%	5%	4%	5%	84%
Warrap	6%	3%	2%	2%	8%	67%
Lakes	13%	66%	20%	16%	9%	95%
Jonglei	58%	76%	62%	60%	59%	98%
Unity	33%	84%	61%	55%	46%	98%
Upper Nile	45%	63%	50%	45%	25%	82%

103 WFP/FAO CFSAM 2015

Food availability is also determined by levels of food imports and trade from neighbouring countries in the region (Sudan, Ethiopia, Uganda, Kenya etc.) and the Arab world. Again, the effects of the recent conflict on international trade routes has inhibited this source of food availability in Greater Upper Nile. In other areas, trade flow from the East Africa region slowed down only marginally as indicated by recent reports by FEWSNET.

Finally, food assistance from humanitarian organisations plays a key role in food availability for vulnerable populations in conflict-affected states, and in addressing the needs of food insecure households in other areas. Box 3 shows the level of food assistance in all ten states.

Food access

With the majority of households reliant on local markets for food at least part of the year, politics and insecurity have made food access volatile in many parts of South Sudan. After independence from Sudan, northern trade borders were largely closed and supplies came instead from neighbouring countries (mostly Uganda, also eastern states of Ethiopia). This did not lead to favourable terms of trade because of long distances, poor road networks, expensive fuel, unfavourable exchange rates, and taxes both official and unofficial. As a result food prices are volatile, often high, and vary significantly between different states.

The outbreak of conflict in December 2013 further effected (and continues to effect) economic and physical food access. With international and domestic trade routes as well as freedom of movement disrupted, local markets became further disconnected from suppliers and customers, and areas of surplus became increasingly disconnected from areas of deficit. This applied across the country, in areas directly or indirectly affected by the conflict. Market infrastructure and assets were in many places destroyed. While Greater Upper Nile states were immediately and visibly affected by staple commodity price rises, other states also felt the market repercussions and were affected by additional needs for food resulting from the displacement of around 1.6 million people within the country.

Economic access to food suffers with reduced household incomes, whether due to conflict or (particularly in urban areas) following downturns in or shocks to the economy. Chronic poverty was exacerbated in many places by conflict, with destruction of assets, livelihoods and sometimes the loss of breadwinners resulting in poor purchasing power at household level, a significant barrier to food accessibility.

In conflict states, families lost income sources, as demonstrated by a steep decline by those depending on salaried/skilled labour in Upper Nile states (from 17% in July 2013 to only 13% a year later) in addition to loss of their livestock and capacity to undertake crop production[104].

Food utilization

FSNMS data does not focus on poor food utilisation but includes poor food consumption, a reflection of low dietary diversity. This is a major contributor to food insecurity in almost all parts of the country and with most acute levels in the Greater Upper Nile states, Warrap and Lakes. Low dietary diversity is caused by food intake consisting mainly of cereals and vegetables, coupled with limited intake of other food groups (such as dairy products), and inadequate levels of proteins and micro-nutrient rich food groups (FSNMS). Insufficient to meet the recommended

104 FSNMS July 2014

requirements for a healthy life, poor food consumption of this nature also predisposes the population to a range of nutrition problems including micronutrient deficiencies, and further exacerbates vulnerabilities to diseases due to a weakened immune system.

Poor food utilization can also be affected by limited knowledge on food preparation, as well as poor hygiene and sanitation. Cultural practices and beliefs may also contribute, for example through the widespread practice of food sharing at the expense of children's intake, or the withholding of available household food for social events, visitors or men.

Stability of food supplies

Stability of food supplies is an important aspect of food security which affects access, availability and utilisation. The systems that supply food to markets and to households need to be stable for household food security to be sustained. Typically, such systems are made fragile by ongoing conflict (that displaces producers and disrupts producers), poor infrastructure (including for roads, transport and storage), and disruption of markets. Given the limited infrastructure network, local food production is even more relevant to ensure adequate food availability in rural markets. The disruption of agricultural activities due to recurrent shocks, whether conflict or weather-related, has a great impact on the flow of supplies in rural areas in the country.

6.2 MALNUTRITION TRENDS AND CAUSES

6.2.1 Malnutrition trends

Malnutrition and malnutrition trends are measured through indicators of Global Acute Malnutrition (GAM) and chronic malnutrition, often referred as stunting. GAM is commonly used to assess rapid deterioration in nutrition status over a short period of time, and is often used as a proxy for health of the whole population. Stunting represents the cumulative nutritional impacts of shocks and stressors over a long period of time. Additionally, stunting is associated with lower educational achievement and lower productivity. Not only does this lower the resilience of households, but it impacts the resilience of the nation: stunted individuals are more susceptible to illness, placing a burden on the health sector; and they are less productive members of the workforce, lowering the national GDP. According to the 2010 South Sudan Health Household Survey, 31 percent of children under 5 years in South Sudan are stunted, with 17 percent severely stunted. This varies by state: the highest rates of stunting are 40 percent in Unity, while the lowest are 27 percent in Upper Nile and Western Bahr El Ghazal. The overall rates of stunting are slightly lower than they were in the 2006 Southern Sudan Household Survey, where 33.4 percent of children under 5 were stunted, with 18 percent severely stunted. Despite the relevance of data on stunting for the resilience analysis, GAM was used for the RCA. The reason for this is twofold: GAM is a more dynamic indicator that captures rapid evolution of malnutrition within quarterly FSNMS rounds, unlike stunting; furthermore, continuous long-term data on stunting was not available, making it impossible to build trends in the reference period for either state or national levels.

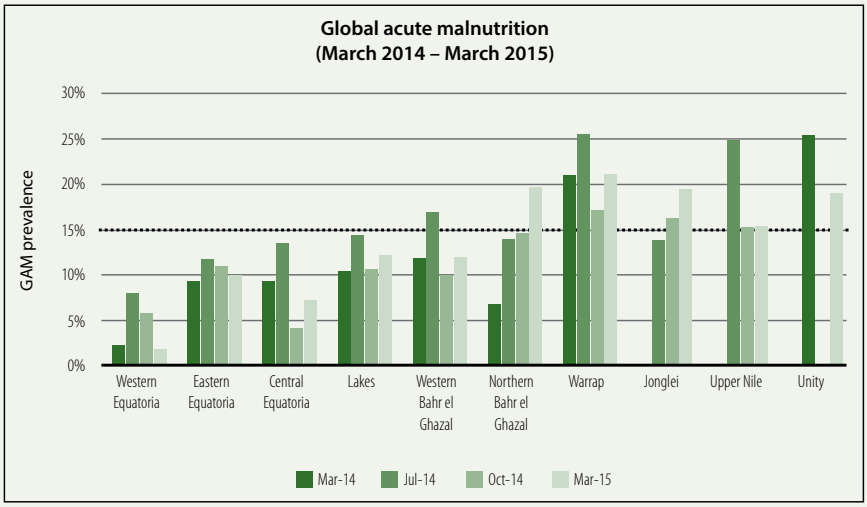
There are different ways of assessing GAM, dependent on the anthropometric data collected. From 2014 onwards, FSNMS collected information on the weight and height of children under five, and determined GAM by comparing the weight-to-height index of a child to the median weight-for-height of the 'standard reference population'. All children with weight-to-height less than minus two (-2) standard deviations from the median weight-to-height of the standard reference population, and/or with bilateral pitting oedema, were classified as having GAM.

At the 2015 April IPC analysis, the current nutrition situation was above the emergency threshold (GAM >15 percent according to WHO classification) in the conflict as well as the high burden states of Warrap and Northern el Bahr Ghazal. In the IPC language, the WHO emergency threshold is categorized as *critical*. Thus, about 80 percent of counties in the conflict-affected and high burden states classified as *critical*[105]. Compared to the previous update (October 2014), Lakes, Western Bahr el Ghazal, and Eastern Equatoria States, remained at *serious* GAM prevalence, while Western Equatoria improved to *acceptable* (<5 percent) and Central Equatoria worsened to *alert*. A slight improvement was observed for counties that recorded the worst nutrition situation in the December 2014 update: Panyijiar, Akobo and Longuchuk, which improved from *very critical* to *critical* based on the SMART survey and FSNMS round 15. Consumption from the local harvest, improved services and dry weather that improved access to markets were all assumed to have contributed to the slight nutrition improvement in these counties.

In-depth analysis of GAM patterns suggests a significant association between child wasting and child gender and age. Children who were male or under two years old were significantly more likely to be wasted according to FSNMS, consistent with findings from other studies. This supports a focus on children under two years in preventive nutrition programming, and the provision of education on child nutrition and care practices as part of humanitarian assistance.

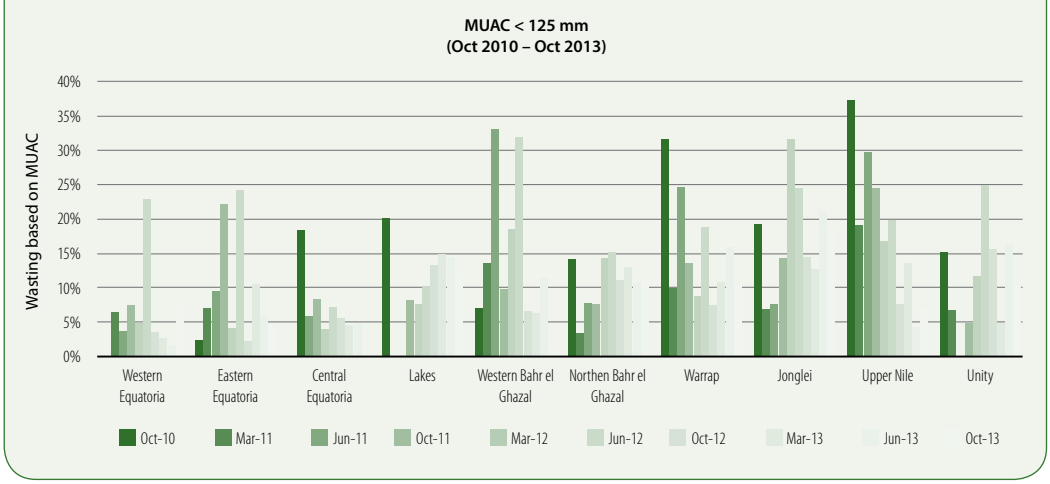
The Greater Upper Nile states and the two traditionally high burden states, Warrap and Northern Bahr el Ghazal, predictably have the highest level of acute malnutrition. Currently in all of these five states, GAM is at or above the 15 percent emergency threshold (Figure 20). In the other states the level of acute malnutrition, even if higher than in the past, is now under the emergency threshold (Figures 20 and 21).

Figure 20: GAM prevalence March 2014–March 2015



105 IPC classifications are based on a combination of nutrition and mortality indicators. The range (positive to negative) is: Acceptable (‹5%), Alert (5 - 9.99%), Serious (10 - 14.99%), Critical (15 - 29.99%) and Very Critical (›30%). Description of the thresholds for each classification can be found at: http://www.fao.org/docrep/010/i0275e/i0275e.pdf

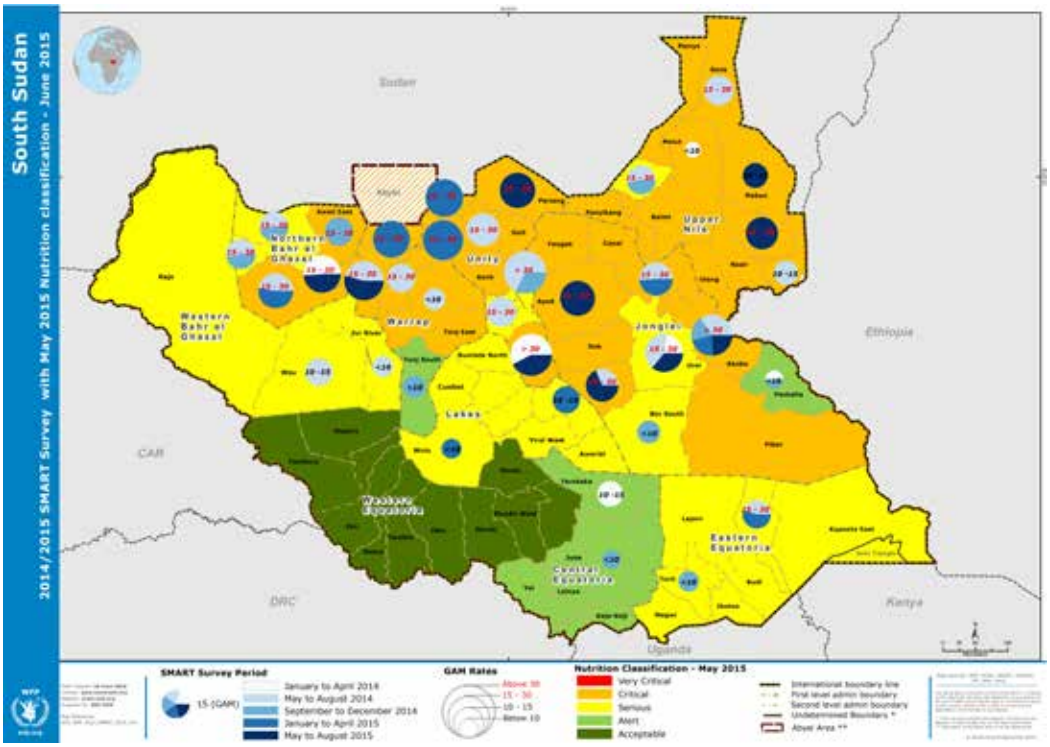
Figure 21: MUAC < 125 mm, October 2010- October 2013



From October 2010 to October 2013, FSNMS collected information on GAM in children under five using the MUAC, where children with MUAC below 125 mm and children with oedema were deemed acutely malnourished; providing the proxy GAM.

In the following period, malnutrition rates continued to be high in conflict-affected states, as well as in Warrap and Northern Bahr el Ghazal. Map 17 presents the summary of several nutrition SMART surveys conducted between 2014 and 2015. The background colour shows

Map 17: SMART surveys summary 2014-2015



the nutrition IPC classification and the circles show the SMART survey period. Larger circles indicate higher GAM prevalence, and most counties with serious or critical nutrition prevalence also show GAM levels above the emergency threshold of 15 percent.

6.2.2 Causes of malnutrition

Malnutrition is caused by poor individual food intake and poor health status, as well as diseases. Underlying these are three contributing factors: 1) limited access to food; 2) poor care and feeding; and 3) poor health and sanitation. These factors are dependent on the socioeconomic and political structure, as well as the livelihood strategies and assets of the population.

While causes differ between counties and households as well as within households, certain factors associated with malnutrition in South Sudan emerged from the FSNMS analysis. These have been divided into community, household and individual level factors:

Community

Insecurity

Insecurity in South Sudan presents major food consumption and access constraints and disruption of livelihoods. Agricultural households are faced with food shortages if the production from their last season's harvest cannot sustain the household until the next season. Mass displacement has had an impact on food availability (see previous section) as well as consumption and care practices. Nutrition SMART surveys conducted around the same time as the FSNMS provide consistent findings. Despite still having a critical malnutrition situation, some areas within the Greater Upper Nile states show improvements, including Akobo and Uror in Jonglei, Leer, Panyinjar and Mayendit in Unity and Fashoda and Longochuk in Upper Nile. The improvement is attributable to a relatively better security situation, increased humanitarian access in most of these counties, and provision of humanitarian assistance including food. However the situation in these areas is not guaranteed to continue improving in the event if insecurity is sustained or worsens (FSNMS Feb 2015).

Household

At household level, a bivariate analysis conducted on the March 2015 FSNMS revealed factors significantly associated with child wasting (P value <0.05) to include: child suffering from diarrhea, child being male, child being under two years, child belonging to a household with a wasted women, to a household having low dietary diversity and to a household not employing stress coping.

Access to food

Households with low dietary diversity were significantly more likely to have a malnourished child. A statistically significant correlation between household's poor dietary diversity and global acute malnutrition of children below five years of age was found in eight of the 14 FSNMS rounds considered**.** Even without current food shortages and conflict, many children in rural households typically eat only two meals a day and do not have a balanced diet, limiting their protein and micronutrient intake and increasing their risk of malnutrition and particularly micronutrient deficiencies.

Households that employed severe (crisis or emergency) coping strategies were significantly more likely to have a wasted child than households that did not adopt any or just adopted stress coping mechanisms. A statistically significant correlation was found in two of the three more recent rounds in which this indicator was calculated. Also, low diversification of income is a critical factor affecting child nutrition security. The analysis highlighted an inverse correlation between GAM and the number of income sources in all FSNMS rounds. However, this correlation was statistically significant in only 25 percent of them. More information on mother and child health and nutrition, plus different types of stress coping strategies and their effects on child wasting and nutrition (in addition to information on who is doing what, when, where), would be desirable in a future analysis.

Care and health practices

Strong association was found between wasting in children and wasting in women of the same household – suggesting not only that they share the same food basket but also that well-nourished mothers (or female relatives) are more likely to provide better care and nutrition to their children. Heavy women's workload and limited childcare options, are factors compounding child malnutrition in rural South Sudan. The April 2015 FSNMS recorded 17 percent wasting among women aged 15 to 49.

Poor care and feeding practices impact child malnutrition. This includes inadequate breastfeeding and weaning, food preservation and storage, mother's education level, and poor access to life skills and nutrition education.

Photo: © WFP/George Fominyen

Health and hygiene

Other common causes of malnutrition not analysed through FSNMS data but likely to play a role in South Sudan are: poor health and sanitation (including limited access to an improved water source and limited treatment of water), high morbidity rates and limited access to health care services. A future analysis would benefit from more information on these issues.

Individual

Disease

Disease has long been a structural factor underlying child malnutrition in South Sudan. Prevalence of disease in children is typically understood to result from hostile living environments, lack of safe drinking water, poor personal and environmental hygiene, poor health-seeking behaviour and limited health services. It can also be a result of micronutrient deficiencies related to poor dietary diversity. According to the March 2015 FSMNS, 45 percent of children suffered from at least one of the common childhood diseases two weeks prior to the assessment. In addition, children suffering from diarrhoea were significantly more likely to be acutely malnourished. Physiological conditions associated with disease can hamper growth by suppressing appetite, impairing absorption of nutrients, increasing nutrient losses and diverting nutrients away from growth. FSNMS analysis further indicates that children that suffered from at least one of the illnesses had a 20 percent higher chance of being acutely malnourished than those that did not suffer any illness.

Given the multi-causal nature of malnutrition, all the above factors play a role in aggravating its occurrence in South Sudan. Disease burden, lack of safe water, and lack of access to health care can all mean that child malnutrition persists *despite* adequate food access. This relationship between improved food security and persistently poor child malnutrition has been seen in POC camps and conflict-affected areas of South Sudan since the crisis began[106].

Individual sub-optimal child dietary intake

The FSNMS data reveals that dietary intake amongst children is extremely poor, thereby contributing to increased malnutrition. For instance, the proportion of children who received at least four food groups (referred to as minimum dietary diversity, or MDD) in the day preceding the FSNSM assessment was only 30.7 percent, indicating the poor quality of complementary feeds provided to majority of children aged 6 to 23 months (October/November 2014 FSNMS), with the poorest/lowest MDD recorded in Jonglei and Warrap states at 11.5 percent and 14.4 percent, respectively. Equally, a composite indicator of quality and quantity of complementary feeds (minimum acceptable diet, or MAD) provided to children aged 6 to 23 months shows an appalling situation of child feeding with only one in ten children receiving the MAD. Jonglei and Warrap states had the lowest rates of MAD at 0.8%.

6.3 LINK BETWEEN OUTCOME INDICATORS AND SHOCKS

Table 2 shows how the different shocks can, in a context of poor or little resilience, have an impact on wellbeing outcomes central to this analysis (i.e. the food insecurity of a household and/or the malnutrition of its children).

106 IPC report on South Sudan, October 2014

Table 2: Link between outcome indicators and shocks

Shocks	Direct impacts	Impacts on Food security	Impacts on Nutrition	Other impacts
Conflict and violence	Lack of or forced movement Disruption of markets Violence Injuries Deaths	Reduced **food access**: livelihoods are disrupted, Reduced **food availability**: markets don't function, are not supplied or are unreachable Crop production is limited because of non-planting caused by fighting or displacement/injury/death of producers, and because of non-tending and damage to planted crops Reduced **food consumption**: less food is available and accessible	Reduced **food intake** of children and women and other vulnerable groups due to reduction of food access and availability Worsening of **health** and hygiene conditions and **care** practices (including infant and young child feeding (IYCF)) Reduced dietary diversity (increasing likelihood of micronutrient deficiencies), especially when crop production is impacted	Psychosocial trauma affects household economy and wellbeing Resort to risky/ unsustainable coping to provide food Increased poverty Reduced access to basic services such as **health (increased exposure to key diseases), education, markets**
Economic shocks e.g. price rises	Market disruption Decreased purchasing power	Reduced food **access** and availability due to increased food **prices**	Reduced food intake and dietary diversity Risk of malnutrition and associated disease burden Reduced access to health and nutrition services (i.e. services less affordable, medicine more expensive) and hygiene or care	Resort to risky/ unsustainable coping practices Increased poverty Reduced access to basic services such as **education, markets**
Floods	Limited road and market access Reduced/lost harvest Loss/spoil of stored food Destruction of assets and infrastructure	Reduced **food diversity and availability** in markets and food distribution Reduced opportunity for business	Reduced **food intake** and **dietary diversity** Lack of safe drinking **water** Increased communicable **diseases** (e.g. malaria, cholera, diarrhoea) Increased susceptibility to malnutrition Reduced physical access to health and nutrition services Reduced ability to store food	Increased poverty due to loss of assets and burden of malnutrition and disease Reduced physical (and financial) access to basic services such as education, markets
Drought	Reduced crop performance/harvest Reduced milk production and wasting of livestock Loss of assets including livestock and crops	Reduced food availability (less crops and milk produced) and access (less income for farmers)	Reduced **food intake** and **dietary diversity** Lack of safe drinking water Increased risk of malnutrition and disease Reduced ability to store food	Increased poverty Reduced financial access to basic social services such as health and education
Animal disease	Reduced livestock health and quality Loss of livestock assets Trade/movement restrictions imposed by outbreaks	Reduced food accessibility and availability (livestock lost or unfit for consumption) Increased market prices for livestock Reduced incomes	Reduce intake of high quality animal proteins (milk, meat, blood, fat) Increased risk of malnutrition and disease Reduced ability to store food	Reduced access to cash through sale of livestock Resort to risky/ unsustainable coping practices Increased poverty Reduced access to basic social services such as **health, education**
Crop disease	Reduced crop production Loss of harvest	Reduced food access (decrease of income) Reduced crop availability in the market Increased market prices for crops	Reduced food intake and dietary diversity Increased risk of malnutrition and disease Reduced ability to store food	Reduced access to cash crops sale Resort to risky/ unsustainable coping practices Increased poverty Reduced access to basic social services such as **health, education**

Chapter 7: Resilience capacities analysis in non-conflict states

This section identifies capacities that emerged from the analysis as distinguishing resilient from non-resilient households. Using long-term household data and a literature review, a comprehensive list of capacities was identified and divided into the three categories: *absorptive, adaptive and transformative*. These cover absorbing or simply coping in the short term, adapting in the medium term, and transforming structurally over the long term. Each of these capacities is not mutually exclusive (i.e. they overlap, and they can be mutually reinforcing) which makes categorisation of certain indicators challenging despite the utility of the 'three capacity' concept. Working definitions of these three key resilience capacities are given in Annex 2.

The indicators that correspond to resilience capacities are based on quantitative data from all states except the three Greater Upper Nile ones, and on qualitative data from all states. While many indicators relate to productivity, livelihoods and income, there are also many linked to human capital and access to basic social services or to social safety nets and social capital. It should also be noted that while most indicators operate at household level (e.g. household labour capacity, livelihood diversification and access to credit and services), there are others that operate at individual level (e.g. psychosocial health) or community level (e.g. presence of Early Warning Systems). These distinctions are made in the following sections.

Identifying indicators

Using quantitative and qualitative data, mainly from the FSNMS survey and a literature review, the analysis compares resilient and non-resilient households in order to identify differences between these two groups. The method included the following steps or consideration:

- Using quantitative data available, resilient households were defined as: 1) food secure according to food consumption indicators and coping capacity; 2) with no malnourished children according to anthropometric data[107]; and 3) non-receivers of food assistance for three months before the survey;
- Where data were available, significance tests (t-tests and chi-square) were run to establish whether differences between resilient and non-resilient households were significant, and therefore whether it was possible to describe characteristics that make a household resilient;
- The table in Annex 5 summarises the statistical significance of the capacity indicators for which there was quantitative data;
- The analysis was done only for the seven non-conflict states due to data availability and, in order to compare different datasets, only information from the 2014 July and October FSNMS rounds was considered reflecting lean season and post-harvest data;

107 GAM was assessed using anthropometric data: Children's MUAC was used until October 2013, and stunting, wasting and underweight data (from weight, height and age values) was used from the 2014 FSNMS rounds.

- Secondary and qualitative data was used to identify and depict other indicators, relevant to resilience, for which there was no quantitative data;
- After a list of indicators was drafted, review and inputs from two partner workshops held in Juba generated and validated the set of capacities that appeared to characterise resilient and non-resilient households;

This analysis aims to identify capacities that make households resilient. This provides an opportunity for stakeholders including Government, agencies and communities themselves to build and strengthen resilience related to food insecurity and malnutrition in South Sudan, both in terms of *what* is provided and *how* it is provided.

7.1 ABSORPTIVE CAPACITIES

Absorptive capacities reflect the ability to cope, typically over the short term, with a shock and its effects.

This section covers absorptive capacity indicators which quantitative data has shown are significant in distinguishing resilient households. These are particularly related to productivity, livelihoods and income that can support a household to withstand and protect itself from a shock. They also include several absorptive capacity indicators for which quantitative data was not available, mainly related to social safety nets, access to services and human capital. Among these are psychosocial strength, savings and informal safety nets, and conflict management and justice systems.

IDENTIFIED ABSORPTIVE CAPACITIES

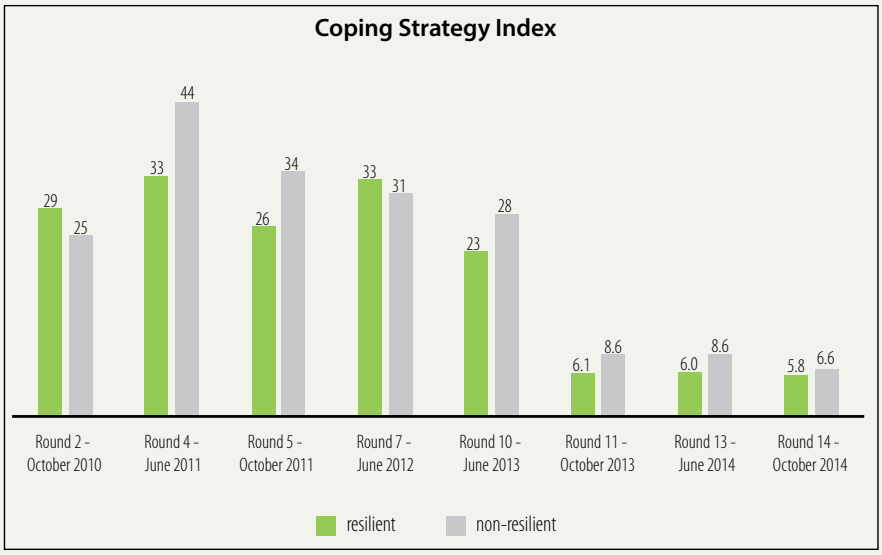
i) Coping strategies
ii) Livestock ownership
iii) Expenditure
iv) Psychosocial strength
v) Savings and informal safety nets
vi) Conflict management and justice systems

7.1.1 Coping strategies

Coping strategies (or mechanisms, or skills) are the efforts people and households use to cope in times of hardship. They differ from income sources mainly because of the temporary nature of their use, which is in response to a risk to wellbeing. An established Coping Strategies Index (CSI) is used to measure the frequency and severity of behaviours that households engage in when faced with a shortage of food. Resulting in a simple numeric score, the CSI is based on the many possible answers to a single question: "What do you do when you don't have adequate food and don't have the money to buy any?" (More information on the coping strategies considered in the FSNMS rounds is in Annex 7).

It is generally assumed that resorting to fewer coping strategies indicates higher resilience. Figure 22 shows the consistent significance of lower CSI scores in resilient households compared to non-resilient ones, indicating the importance of adopting a smaller number of effective food-related ways of coping in sustaining nutrition and food security despite shocks. The score gap between rounds conducted before and after June 2013 is due to the different methods

Figure 22: Coping Strategies Index (FSNMS)



adopted for the CSI calculation in the two periods: rounds 2 to 10 used a context-specific CSI measure, whereas subsequent rounds adopted the reduced CSI which has lower scores for each class of severity. Resilient households proved to have consistently lower CSI scores despite the approach adopted.

Several of the following sections cover individual coping strategies and their significance to resilience. These include sale of livestock, changes in expenditure levels and patterns or the use of savings and informal safety nets.

7.1.2 Livestock ownership

South Sudan has historically relied on pastoralism and majority of the population who are involved in agriculture keep livestock. Livestock is a key asset in terms of productivity, nutrition and social status and it helps a household to absorb shocks and overcome stressors. Typically, those with livestock would sell some to buy food when harvests were low and markets disrupted.

Figure 23 shows the statistical significance of livestock ownership in resilient compared to non-resilient households during several rounds of FSNMS. For example, 78 percent of resilient households owned livestock in June 2013 compared to 67 percent of non-resilient households.

Related, Figure 24 shows the percentage of households with livestock-related income sources (i.e. production and sale of live animals, meat, milk, milk products, or other livestock products). Again, the gap is clear between resilient and non-resilient households when it comes to involvement in the pastoral economy, still a mainstay of production and society in much of South Sudan.

Figure 23: Percentage of households owning livestock

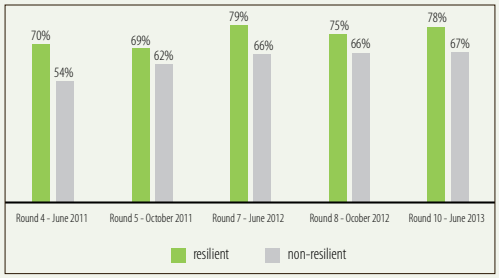
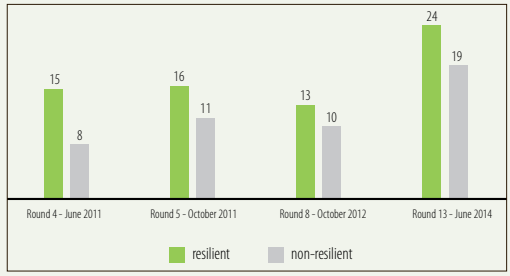


Figure 24: Livelihood activities percentage of households involved in livestock sales (FSNMS)



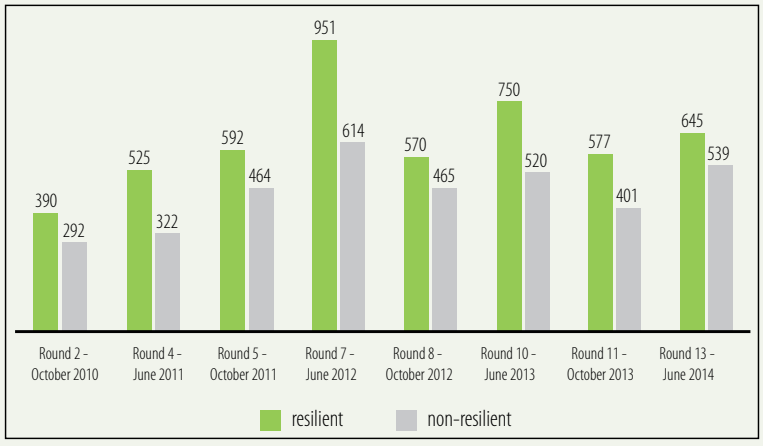
7.1.3 Expenditure

A household's total monthly expenditure is considered a proxy of income, as it indicates a households' access to cash and/or credit for non-basic needs that can be used in the event of a shock. Households with higher incomes can adjust their expenditures to withstand shocks, thus limiting their exposure to food insecurity and malnutrition. Less resilient households tend to have a lower total expenditure, and a higher proportion of their total expenditure is spent on food.

Figure 25 shows marked difference between resilient and non-resilient households, during the FSNMS periods, when it comes to total monthly expenditure.

Statistical significance was observed in the correlation between resilient households and share of food expenditure (which was significantly lower) as opposed to non-resilient households in a high number of FSNMS rounds (seven out of 13). This result is not surprising given that share of food expenditure is one of the indicators used in the algorithm to classify food security, which is one of the major components of resilience in the RCA methodology.

Figure 25: Total monthly expenditures in pounds (FSNMS)



Other absorptive capacities for which there was no quantitative data

Several absorptive capacity indicators were identified in the literature review and in consultations held as part of this analysis, yet quantitative data was not available for them. These include psychosocial strength (an individual-level capacity); savings, material assets and informal safety nets (household-level capacities); and conflict management and justice systems (community-level capacities).

7.1.4 Psychosocial status

Aspirations and attitudes can affect individuals' resilience by shaping their decisions and responses to a shock. These may be determined by a person's upbringing and life experiences, cultural background and expectations, and individual character. They can also be influenced by quality education, health and nutrition, and access to opportunities.

In South Sudan, trauma or psychosocial distress, coupled with generally restricted access to services and opportunities, can negatively affect resilience - for example by inhibiting the forming of relationships or positive risk-taking and entrepreneurial behaviour.

While seen clearly in other contexts (e.g. Disaster Resilience Leadership Academy 2012), data to support analysis of the link between psychosocial status and resilience in South Sudan was not available for this analysis.

7.1.5 Savings and informal safety nets

Where savings (disposable cash) are available at household level, it indicates the capacity to spend money to effectively absorb a shock – for example to repair damage, buy emergency assistance, access key services or relocate. While seen clearly in other contexts (e.g. the RCA for Karamoja 2015 which analysed the relationship between presence of household savings and resilience), data for this resilience capacity in South Sudan was not available.

In addition, informal safety nets are known to be critical in South Sudan in distinguishing resilient from non-resilient households. These are usually networks of reciprocal assistance (e.g. timely provision of food, cash, labour or other support) between relations, neighbours and/or members of the same group, and they determine a household's ability to absorb a shock. Only two FSNMS rounds showed a statistically significant correlation between resilience of households experiencing problems of access to food and adoption of coping strategies involving informal safety nets. Unfortunately, the differing nature of this module in the various FSNMS rounds did not provide data to support a thorough analysis.

7.1.6 Conflict management and justice systems

Dispute resolution systems provide the capacity to manage pressures that lead to violent conflict and thus undermine development, economy and society. Whether at community level or government-led, access to inclusive and accountable conflict resolution and justice mechanisms can break the chronic cycle of vulnerability for those affected by insecurity for decades and even generations. In South Sudan, inclusion of youth in conflict resolution mechanisms - and civil society in general - is presumed to be particularly relevant given the significant role this demographic has played as both perpetrator and victim of recent and historical violence.

Data on the presence of conflict management and justice systems was not available for this resilience analysis but it is hoped it could be covered in future studies.

7.1.7 Material asset ownership

During discussions at the RCA validation workshop, stakeholders highlighted that an important absorptive capacity of households is asset ownership. This is understood as the number and value of material (non-productive) assets owned by a household and is a proxy for wealth. Households with a greater number and variety of material assets are more able to absorb a shock by selling them to fund a new livelihood strategy, a relocation, or another response to the shock. No suitable data was currently available to analyse this capacity quantitatively in this study.

It is recommended that possible future analyses in fragile and conflict-affected situations such as South Sudan consider what data might be available for these and other absorptive capacity indicators understood as relevant to resilience.

7.2 ADAPTIVE CAPACITIES

Adaptive capacities support a household or community to not only withstand shocks but to positively adapt in the face of social, economic and environmental change. They tend to be more pre-emptive than absorptive capacities and operate on a longer time scale. Adaptive capacities explored in this analysis include forms of livelihood diversification and adaptation, access to proactive and sustainably managed land and access to sources of income that are salaried or non-destructive of the environment. For all these, statistical significance between resilient and non-resilient households can be demonstrated. This section also covers several adaptive capacity indicators for which quantitative data was not available, ones which are related to productivity but also to access to services and social safety nets. These include seasonal migration and remittances, literacy and education of the head of the household, and early warning and disaster mitigation systems.

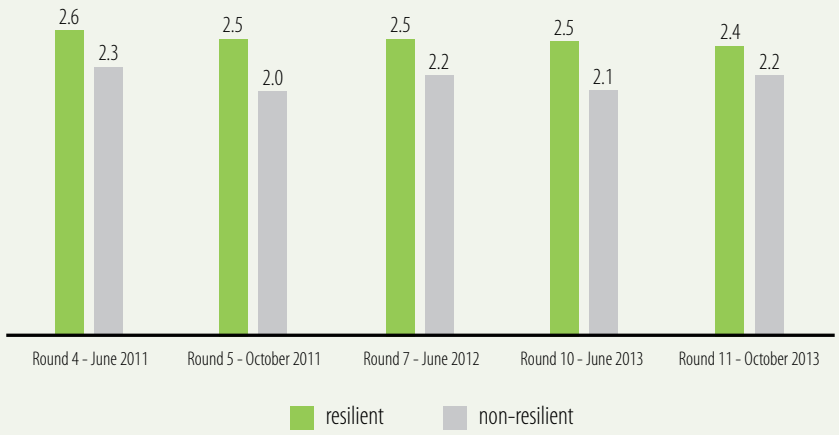
IDENTIFIED ABSORPTIVE CAPACITIES

- Livelihood risk diversification
- Improved access to productive and fertile land
- Income Source Reliability and Sustainability
- Skilled household labour
- Seasonal migration and remittances
- Educated household head
- Early warning and disaster mitigation systems

7.2.1 Livelihood diversification

Livelihood diversification is classified as the number of different livelihood activities or sources of income employed by a household (up to three different income activities). This indicates the potential for a household to rely on an alternative livelihood activity or income source, if one is affected by a shock. *Diversity* of livelihoods is critical, to ensure they are not all affected by the same shocks (e.g. a particular crop or animal disease, a flooding incident, a specific market price drop, a cessation in a certain employment opportunity etc.). Figure 26 shows that non-resilient households, to a significant degree, are engaged in a less diverse set of livelihoods

Figure 26: Livelihood diversification, number of different income activities (FSNMS)



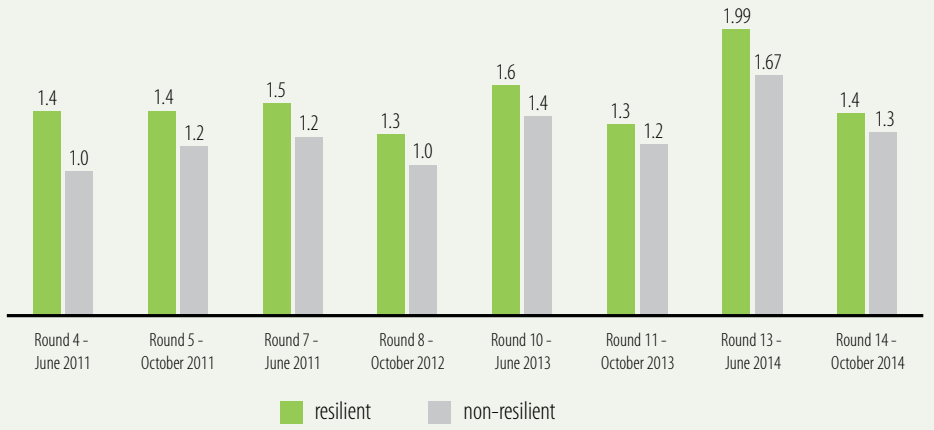
compared to resilient ones. The correlation between resilience and the number of income sources was observed in a high number of rounds and was statistically significant for the five rounds indicated in Figure 26.

Cultivating different types of crops can be an example of diversification that increases a household's chance of sustaining its livelihood even in the face of a localised shock such as pests or diseases that affect particular crops. Crop diversification is less effective in the face of a blanket shock such as a flood or severe drought.

While data on different levels of crop diversification was not available for this analysis, data on diversification of livestock (among pastoralists or agro-pastoralists) showed diversification to be a significant feature of resilient households. Risk diversification comes from having different kinds and species of stock (cattle, goats, sheep, donkeys), since this may provide resilience against shocks related to climate or disease. Figure 27 shows the significance of livestock diversification in distinguishing resilient households.

Livestock owners' resilience is dependent on many other factors not shown in FSNMS data, but well-articulated in a range of mostly qualitative data. One of these is enabled mobility, when pastoralist families and herds can move along traditional or emergency access and grazing routes. With herds dependent on year-round pasture and water, distribution of which varies per season, being able to freely move in pursuit of pastoral resources is critical to livelihood success. As a customary ecological strategy, it is also important from a natural resource management perspective. It depends on physical, climatic, economic and also socio-cultural factors including absence of conflict. Another component of adaptive pastoralism that can withstand and adapt in the face of shocks is access to livestock health care, ensured through the presence of livestock health services that are preventive as well as curative, and through resources such as drugs, immunisations, technical experts and outreach workers. Access to adequate livestock health care provides a household and community with the means to understand, prevent, and treat animal diseases, as well as withstand shocks including outbreaks, epidemics, flooding, dry spells and drought.

Figure 27: Livelihood diversification, number of different animal owned (FSNMS)



Services that enhance and protect productivity are also critical to the resilience of agriculturalist households, while another factor commonly raised is their access to improved seed or food storage. This includes granaries, storage sacks and containers, dedicated buildings and other solutions for storing seed or food that can be used in times of shortage or shocks.

7.2.2 Improved access to productive and fertile land

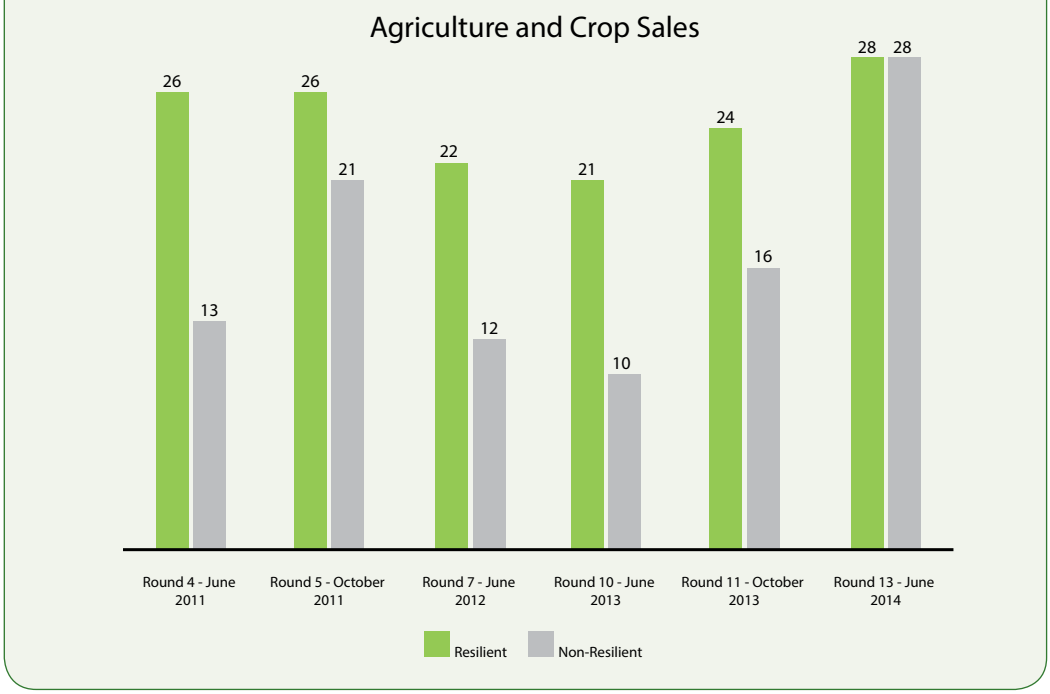
Secure access to productive land is consistently referred to as an important feature of South Sudan's resilient households in the event of a shock. It underpins their ability to produce sufficient food, and their ability to diversify production to overcome stressors and withstand certain shocks.

Peace and conflict play a major role in land access in South Sudan, which is not affected by issues of competition in the same way as neighbouring countries with higher population density. In 2014, access to land was often denied in many counties in Unity, Upper Nile and Jonglei states where communities fled their homes and, even if they remained *in situ*, they were too frightened to farm. Perceived security was the main driver to populations' movement in the three states. As a matter of fact, conflict-impeded access to land reduced the ability of an estimated 73 percent of farmers to take advantage of a good season, the vast majority of whom in the Great Upper Nile region. In the seven states not directly affected by the conflict, planting assessments noted an expansion in both numbers of farming households and crop-cultivated areas[108].

Access to land that is productive and is sustainably managed is important in determining resilience at household and community level. This is reflected in indicators of land degradation; or conversely, Natural Resource Management (NRM) indicators that show how the effects of environmental degradation are mitigated through management of collective natural resources (structure, organic matter content and fertility of top-soil layers, water sources, pasture, forest, wetland etc.) Successful NRM strategies include campaigns and initiatives, committees and

108 FAO/WFP, 2015.

Figure 28: Percentage of households involved in agriculture and crop sales (FSNMS)



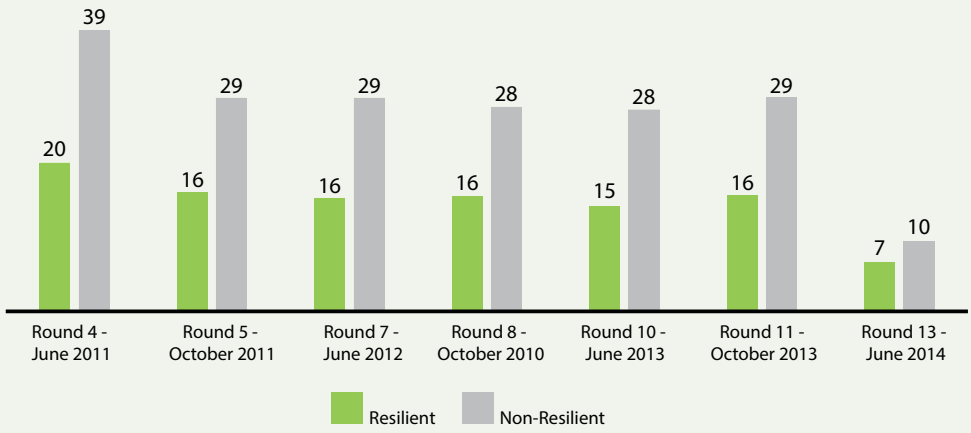
governance systems, and regulatory bans or policies, which affect the sustainable management of natural resources. NRM is especially important given evidence that non-resilient households in South Sudan are much more engaged in income activities with poor reliability and sustainability (see section on ISRS). NRM can also play a vital role in resilience in contexts where disputes over natural resources (for example grazing land or water sources) can ignite conflict: in these instances, effective management of natural resources is a form or conflict prevention and mitigation.

Ultimately improved access to productive land enables higher agricultural yields. Figure 28 below shows the direct correlation between enhanced access (expressed as proportion of population relying on crop sales) and improved household resilience. This correlation is stronger in some regions such as Greater Equatoria.

7.2.3 Income Source Reliability and Sustainability (ISRS)

Certain income sources compromise long-term resilience because they are unreliable or have negative social or environmental impacts. They deplete the natural resource base, prompt competition over resources, or otherwise compromise human and social capital which is fundamental to long term adaptation and positive development despite shocks. Typically in South Sudan, such income sources include sale of firewood, charcoal and grass, begging, borrowing, sale of food aid, gift receiving etc. Income Source Reliability and Sustainability (ISRS) is a measure which reflects this. Figure 29 shows that non-resilient households in South Sudan are much more engaged in activities with poor ISRS; the correlation is statistically relevant in seven of the 14 FSNMS rounds considered in the analysis.

Figure 29: Percentage of households with poor income sustainability and reliability (FSNMS)



There is a gender dimension to this, since women in rural areas of South Sudan are known to disproportionately suffer from harmful effects of climate change that is linked to chronic environmental damage caused by poor ISRS[109]. This is due to their high dependence on natural resources as their main source of livelihood, possible lack of information on good ISRS strategies, and unequal access to coping mechanisms, alternative resources and decision-making processes.

7.2.4 Skilled household labour

Salaried or skilled labour is the presence of household income *unrelated* to agriculture or pastoralism, thus not subject to climatic or natural shocks such as drought, flooding and crop or livestock disease. In the context of South Sudan, this form of wage labour is generally linked to urban contexts, the public sector (primarily government jobs), limited manufacturing/extractive sector (oil factories in northern parts of the country) and the informal sector (since private sector development to date remains limited). Accessing non-traditional and non-climate-independent sources of income like these can be an effective adaptive strategy given the recurrence of 'natural' or climatic shocks in South Sudan (although such jobs will be subject to other forms of shocks including conflict and economic crises). Like seasonal migration, this form of labour is typically done more by men than by women, who (especially in rural areas) lack the same access to quality education, skills and capital, as well as being confined by social and cultural norms and domestic expectations. The consultations helped clarify that for both men and women, there tend to be fewer such labour opportunities than there is demand. Figure 30 shows the considerable difference between resilient and non-resilient households when it comes to involvement in skilled and salaried labour: resilient households are almost twice as involved in skilled and salaried labour than non-resilient ones.

This finding should be interpreted alongside the significance to resilience of supported and effective customary livelihoods – in particular pastoralism, as indicated by livestock ownership as a vital absorptive capacity (previous section). Livelihoods are rarely practised in isolation

109 Oxfam 2013

Figure 30: Percentage of households involved in skilled and salaried labour (FSNMS)

by communities, households or even individuals; combination and diversification of effective livelihood strategies are critical to resilience. There are distinctions too when it comes to the success of livelihood strategies in rural and urban contexts, and the latter are becoming increasingly relevant for a population undergoing increased rural-urban migration as well as increased urban vulnerabilities.

Other absorptive capacities for which there was no quantitative data

Several adaptive capacity indicators were identified in the literature review and in consultations held as part of this analysis, yet quantitative data is not yet available for them. These include seasonal migration and remittances, and education of household head (both individual and household level capacities), and early warning and disaster mitigation systems (a community level capacity).

7.2.5 Seasonal migration and remittances

In South Sudan between March and May, there is considerable migration from rural to urban areas of people seeking employment in water collection, construction, domestic labour etc. Other forms of migration are between towns, between rural areas, and in the direction of infrastructure projects or extractive/other enterprises. Women tend to migrate less (especially in rural areas) on account of domestic and child care demands.

During the lean season, migration of pastoralists and their herds to secondary urban centres can be a crucial adaptive capacity. It enables better access to hay and water and is an opportunity to exchange animal products against goods and services. Agencies working on pastoralism who attended the RCA validation workshop considered that this seasonal migration towards urban centres is one of the most relevant adaptive capacities for pastoralists to withstand the hardship of droughts or dry season, sustaining their food security and nutrition status.

In general, migration offers opportunities for accessing services and markets, cash and employment, and skills and networks. It can boost resilience by mitigating the impact of shocks or enhancing future livelihood and economic security.

Data on the relationships between seasonal migration and resilience was not available for this analysis, but better understanding would be important in future related studies.

Remittances (transfers of money, in payment or in gifts, from a source outside the household, usually a relative abroad) play an important role in reducing vulnerability in South Sudan[110]. The pre-independence civil war generated a broad diaspora who maintained links with their relatives and often supported them with remittances. This income is not affected by local shocks and stressors and can therefore act as a safety net in times of need or a source of capital for enterprise and innovation over the longer term. Remittance data would be an important part of future resilience analyses.

7.2.6 Educated household head

*In S*outh Sudan, education decreases the risk of unemployment and also increases the chances of being self-employed[111]. A household head who has received quality, relevant education beyond primary level can enable their family to overcome stressors and adapt despite shocks, particularly in a context where customary livelihoods are shifting and diverse, while urban ones are often proliferating. As well as increased economic productivity, educated household heads should have received life skills critical for the health, wellbeing and development of the whole family. Educated mothers in Somalia were seen to have better nourished children year-round, supporting programming targeting female education for the sake of enhanced life skills, wellbeing and development of households and communities (UNICEF Somalia). According to UNESCO's Education Transforms Lives report, "providing all women with a primary education would reduce child mortality by a sixth, and maternal deaths by two-thirds"[112].

A caveat is that the provision of education that is neither quality nor relevant can actually deplete resilience: evidence on the presence of schooled youth from pastoralist families who have been 'de-educated' in pastoralism, yet not provided with marketable skills or viable opportunities in exchange, suggests that they are left 'between two worlds' and that their non-productivity and disaffection poses a significant threat to economy and society[113]. The following section on transformative capacities contains more detail on the role of quality and relevant education in resilience, while in general it is recommended that future analyses secure data to allow relationships between education of household and resilience to be explored.

7.2.7 Early warning and disaster mitigation systems

Since many of the key shocks affecting South Sudan are non-cyclical or unpredictable, Early Warning Systems (EWS) are particularly important to household and community resilience. They provide timely information on shocks and the availability of related services and assistance, supporting people's ability to make informed decisions for safeguarding livelihoods, assets and wellbeing. South Sudan's Ministry of Humanitarian Affairs and Disaster Management supports Disaster Risk Reduction action plans at community level (including nutrition and disease surveillance, an important potential indicator) and future analyses should consider use

110 While World Bank data on total annual remittances received per country do not cover South Sudan, data that exists shows a very significant remittance economy to the country. For example, Australian government data shows that remittances from South Sudanese in Australia to their country of origin totalled USD 24.6 million in 2012.
111 World Bank 2014b
112 UNESCO 2013
113 UNICEF ESARO 2015

of this and other data to investigate the links between EWS and resilience. Related, data on disaster mitigation systems (e.g. flood-proofed infrastructure, shock-proofed services, seasonal preparedness and scalability in health, nutrition and education) was also unavailable in this analysis despite its assumed importance to resilience.

It is recommended that possible future analyses in this and other contexts consider what data might be available for these and other absorptive capacity indicators understood as relevant to resilience.

7.3 TRANSFORMATIVE CAPACITIES

Transformative capacities tend to be part of longer-term responses that fundamentally address vulnerabilities at community, environment or systems level. As a result of these capacities, a cycle of vulnerability caused by stressors can be disrupted, the negative effects of shocks avoided, and resilience ensured.

Similar to absorptive and adaptive capacities, the analysis of transformative capacities in South Sudan begins with a focus on livelihoods, productivity and income (support for land and livelihoods). Other crucial dimensions are also explored: access to basic services (quality education, water, health, markets and infrastructure), and social safety nets, social capital and cohesion, access to credit, community networks, youth and women's empowerment.

For most of the capacities listed here, the statistical significance of their correlation with household resilience could not be determined. However, findings from secondary and qualitative data are given to indicate the importance of these capacities for an individual/household/community in the event of shock; and there are recommendations for these types of data to be collected in future.

IDENTIFIED ABSORPTIVE CAPACITIES

- Access to markets and infrastructure
- Access to quality education
- Support for land and livelihoods
- Access to water and sanitation
- Access to health services
- Access to credit and formal safety nets or social protection
- Youth employment and empowerment
- Women's empowerment, attitudes and aspirations
- Community networks

With a longer-term focus, this section on transformative capacities relates more to a sustainable development perspective than the previous two (on absorptive and adaptive capacities). It should be read in conjunction with those, and in light of the recommendation in the following sections for a 'dual track approach' that combines addressing immediate humanitarian needs and promoting a longer term, risk-informed development approach.

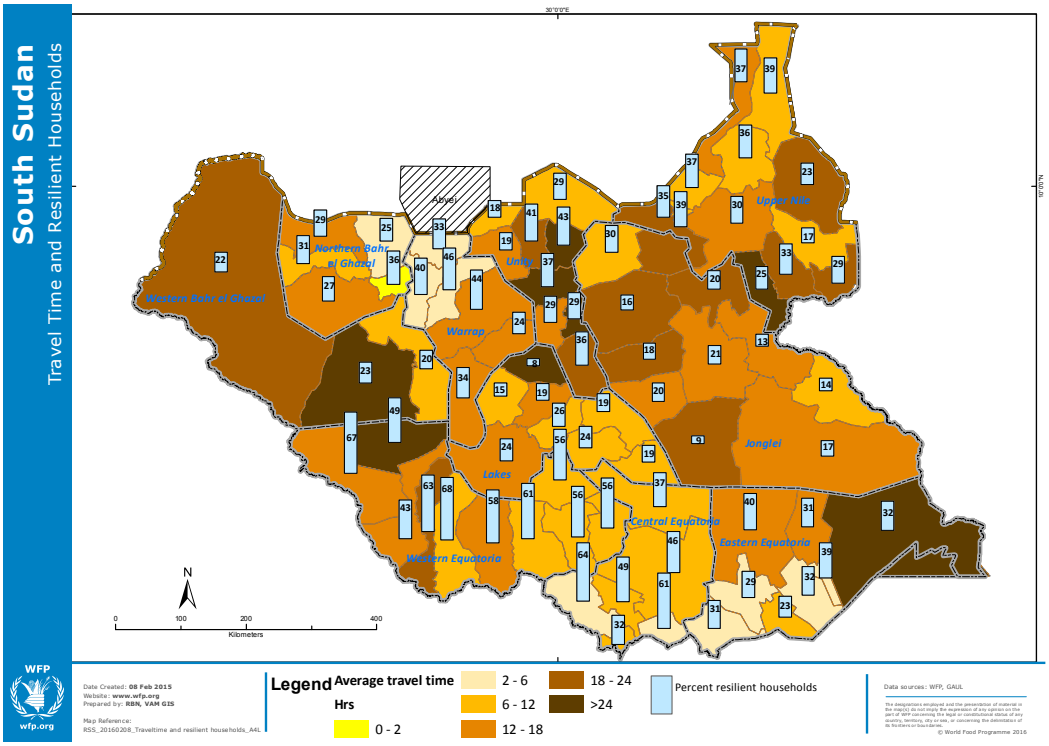
7.3.1 Access to markets and infrastructure

For people in South Sudan, access to markets and infrastructure is critical to longer-term *transformative* resilience and part of the ability to transform productivity into livelihood security. It can be seen through distance to a local, feeder, or main market, for sale or agricultural, livestock-related, and other local products. Access to local markets in particular is vital, given the infrastructure challenges faced by all states and most communities. Access to market *information* is also important to resilience as it indicates that producers are better informed when buying or selling, especially during times of shocks and stressors and therefore are less vulnerable to volatile and externally-influenced factors. The earlier section on stressors clearly suggests how difficult market access is in South Sudan, particularly where the repercussions of conflict or the rainy season inhibits this further.

Related, improved road access and transport infrastructure is not only imperative for market access, but it is also critical in connecting people, products, services and ideas, in ways that increase and sustain development gains despite shocks and stressors.

Map 18 combines the average distance from markets (in hours) of communities living in each county and the estimated prevalence of resilient households, according to the definition of this report (i.e. food secure, with no children malnourished and not having received food assistance). The average distance from sites with markets is based on the assumption that each community refers to the closest market for food supply. The shortest travel time (and distance) from each point on the map to the market locations is determined, taking into account the travel speeds allowed by different terrains as well as any natural or man-made barriers encountered.

Map 18: Average travel distance and estimated prevalence of resilient households by county (2010-2015)



The travel distance derives from combined average distances of scenarios between pre- and post-onset of the conflict, and therefore takes into consideration the reduced market integration in Greater Upper Nile states after December 2013. In terms of the relationship between distance to markets and distribution of resilient households, a positive correlation was indicated but not statistically significant. It should also be considered that accessibility to markets is only one of the underlying components to food insecurity and malnutrition.

The highest travel time to markets is observed in Jonglei, eastern Upper Nile, Unity, Eastern Equatoria, Western Equatoria and Northern Bahr el Ghazal states. In Jonglei, a very low prevalence of resilient households is observed, supporting a correlation in that state between resilience and market access. The increase in size of catchment areas for main markets presented in the previous section (Map 12 and 14) confirms that physical access to food is a significant challenge for inhabitants from most counties of Jonglei, notably after the onset of the conflict. Access problems in Western Equatoria and Western Bahr el Ghazal states do not translate uniformly into high food insecurity and malnutrition given that physical access to food from own production (or shared within the community) in these cropping areas compensates for the significant infrastructural gaps, especially in Western Equatoria.

Unity has very poor accessibility to markets, mainly as a result of seasonal flooding and conflict in recent times. However, over the last five years the average prevalence of resilient households has been relatively high. In northern Lakes (Rumbek north), as highlighted by the CFSAM reports in 2014 and 2015, market integration has an impact on food security. This has further deteriorated in recent times as a result of the contraction of planted areas due to localized fears related to the insecurity in Lakes. The northern part of Upper Nile benefits from commodity flows from Sudan and in parts (Renk county) from mechanised farming and high yields. The eastern part of Upper Nile however registers high food insecurity in which low accessibility to markets resulting from seasonal flooding and poor infrastructure helps explain consistently high levels of food insecurity and malnutrition. The remote eastern pastoral areas of Eastern Equatoria state (Kapoeta East) show a relatively high prevalence of resilient households over the last five years despite very low accessibility to markets.

Finally, the highest levels of both accessibility and resilience are observed in the southern counties of Greater Equatoria that benefitted over the past five years from the commodity inflows from neighbouring Uganda at relatively low prices. The eastern counties of Northern Bahr el Ghazal and northern Warrap also have relatively good infrastructure. This differs from other counties in these two states, where levels of malnutrition are among the highest in South Sudan, partly explained by more limited physical access to markets for both goods and the local population.

7.3.2 Access to quality education

Education is regarded as a cornerstone of resilience, both intuitively and based on evidence. In various fragile contexts, quality and relevant education has been seen to support resilience during and following periods of conflict and insecurity, behaving as a 'portable asset' of great value[114]. As a transformative capacity in South Sudan, it can improve the economic strength of individuals and communities, and boost social development on many levels. Achievement of primary education is linked to acquisition of jobs in the salaried economy of Juba and other

114 Bird et al, 2011: 1

urban centres[115], and this is particularly important against the backdrop of increasing rural-urban migration (and emerging urban vulnerabilities) in South Sudan. Literacy is a valued life skill acquired from school alongside others important to productivity as well as health and wellbeing. A quality and relevant education supports skills required for problem solving and adaptability and promotes an individual's confidence and aspirations as well as their social networks and connections. It can fundamentally change life pathways, particularly for women: According to UNESCO[116], if all women had primary education, there would be 15 percent fewer children married under the age 15 – a statistic likely to apply to South Sudan where child marriage is a critical protection issue. For all these reasons and more, increased quality and relevant education in Sudan is a vital component of resilience. It has the ability to reduce existing stressors and serve as a form of 'immunity' to shocks by facilitating the economic and social responses required to overcome them. There are several ways to indicate education in a resilience analysis, as follows.

School access indicates the available opportunity to transform lives through quality education and to acquire the skills, knowledge, networks and opportunities for long-term resilience. Access can be measured as distance to the nearest primary school (in kilometres), or as time taken to reach there (in minutes). This shows physical access, and should be triangulated with other forms of access including financial (i.e. a household's ability to meet the cost of fees, uniforms, books and other costs) and social (i.e. presence or absence of social exclusion issues, or gender and protection issues that force students to drop out of school before secondary level education).

Literacy is another important indicator related to education. It may be strictly defined as being able to read and write, but it also indicates more generally the capacity of an individual to connect, communicate, trade, travel and learn. It supports adaptive resilience because it allows access to an educated and professional world, to towns with increased opportunities for employment, and to information as well as the technology that houses it. While globally the links between literacy and improved development outcomes in relation to shocks or adversity are well founded[117], data available to this analysis could not statistically demonstrate the same for South Sudan, where literacy levels differ markedly between urban and rural areas (50 percent compared to 27 percent, respectively) and even more so between men and women (40 percent compared to 16 percent)[118].

Pupil retention in school is an important indicator of a transformative resilience capacity because it shows safeguarding of education and its gains despite shocks and stressors. It can be seen through measures to support children to consistently attend school, throughout the year and despite seasons or shocks. These measures might include the provision of school feeding programmes, support for user fees and other costs and adoption of flexible education models in particular to accommodate young people older than the typical enrolment age (including children formerly associated with armed groups) or children from pastoralist communities and cattle camps.

115 World Bank 2014b
116 UNESCO 2013
117 DFID, 2002
118 World Bank, 2015 using Census, 2008 and NBS, 2009

Access to quality education beyond primary level (i.e. secondary and higher) represents a broader access to opportunities for either maximising traditional livelihoods or embarking on non-traditional and professional wage employment. Many South Sudanese have used higher education as a route to the diaspora and the economic and social opportunities it represents for them and (through remittances and connections) their families. Yet many households who send their children to primary school find themselves unable or unwilling to send them to further education at secondary and higher levels (college or university). Therefore, assessing access to secondary or higher education would be important from a resilience perspective and could be done through measures of physical but also financial and social access.

An important issue raised in the workshop to review this analysis, was that of indigenous knowledge and education. The contribution of education to resilience is not only through formal schooling with its imparted knowledge, but also in the power of education more broadly that supports knowledge and skills relevant to students and their context. Flexible approaches to schooling that accommodate local realities and economies, including by incorporating valuable indigenous knowledge, provide an adaptive capacity important to resilience and its understanding.

7.3.3 Support for land and livelihoods

Land tenure security reflects the capacity to maintain land access and use – for dwelling, productivity, peace and security – despite shocks and stressors. This can be assessed through the existence of policy or regulatory frameworks that recognise formal and customary land tenure, prevent 'land grabbing' and have the authority and ability to resolve land disputes. This is especially pertinent in areas of South Sudan with conflict-displaced returnees or IDPs (see previous section on stressors) due to strained sharing of resources including land. Issues concerning land are particularly relevant to the wider returnee debate which has been particularly relevant since independence. Many South Sudanese were displaced as refugees in neighbouring countries or in northern Sudan. However, after independence, it is estimated that well over 2 million people have returned to South Sudan. This is the whole genesis of the ongoing debate on rural-urban migration and land tenure issue, which emerges as an even bigger problem in Aweil and other urban areas.

Urban areas are increasingly suffering from land security issues, and discrimination against women's ownership of land is a longstanding challenge. The multiple dimensions of land issues in South Sudan were discussed in the consultative workshop where it was highlighted that establishing and implementing policies or systems for protecting security of land tenure, access, and use, would be a critical transformative capacity to support resilience. Despite the current conflict leading to massive displacement, the whole debate related to land tenure and rural-urban migration is not yet widely faced by the international community and development stakeholders. The understanding is still that IDPs are likely to return to their origins when peace deal is honoured. Land tenure in the specific historical context of South Sudan might become an increasingly problematic issue, whose effects have yet not manifested.

Support for pastoralism would also be important in this context, and can be seen in policies and programming that assist existing livestock strategies around semi-nomadic herding, including animal health, value chains and marketing. Given the fundamental importance of pastoralism to the South Sudanese rural communities – for nutritional, economic and socio-cultural reasons

– support for pastoralism is critical in accommodating locally held aspirations and priorities for productivity and development. One aspect is veterinary regulation, which can be shown through the presence of regulations and measures to prevent trans-boundary livestock disease outbreaks. This would indicate policy-level capacity to prevent and mitigate the negative impacts of shocks linked to trans-boundary livestock diseases. Another aspect is animal health or veterinary services (and the knowledge and skills they enable), which help households to deal with animal sickness as well as avoid outbreaks and increase productivity.

7.3.5 Access to water and sanitation

Access to adequate safe water defines health, hygiene, nutrition, productivity and development. Being able to access safe water across seasons and despite shocks (e.g. flooding, conflict and displacement) is a key determinant of resilience in South Sudan. This is especially true for children and vulnerable persons. Related, sanitation is critical to resilience, particularly given the country's limited and often damaged and under-resourced infrastructure and knowledge levels, which were worsened during acute climate episodes or displacement, congestion and rapid urbanisation due to conflict (see earlier section on stressors). These are ideal conditions for disease and malnutrition linked to poor hygiene. Improved sanitation, for example safe disposal of human excreta and associated hygiene promotion and knowledge, includes a range of toilet systems and infrastructure. It also includes simple sanitation and hygiene promotion measures – increased hand-washing for example is known globally to be among the cheapest and most effective ways of improving child morbidity, mortality and nutrition status, even in the context of displaced and at-risk populations. Awareness of sanitation is a portable household or community asset capable not only of shielding children and families from disease and malnutrition, but also of breaking cycles of related chronic vulnerability linked to the persistence of these.

Rain or flood water harvesting can enhance household health and nutrition as well as productivity stressors, as can small-scale irrigation in agricultural contexts. Irrigation schemes are often seen along rivers in agro-pastoralist areas of South Sudan to support cultivation in fragile and water scarce areas. They demonstrate an ability to harness greater productivity from poor land or soil, potentially reducing vulnerability to future food insecurity.

7.3.5 Access to health services

Health services are a public good essential to community resilience. Not only is access to them valuable in times of sickness or disease outbreaks/epidemics, but their preventive services and education provision ensure that individuals (especially women and children) lead active, healthy and productive lives. Remote, hard-to-access facilities can take a further toll on sick persons' lives, and exact high opportunity costs (i.e. the costs of not working) for parents or others assisting sick persons. Health services that are physically, financially and socially accessible help maintain wellbeing and productivity.

In rural South Sudan, accessing health facilities which are few and far between and often critically under-resourced, is a major challenge (see earlier section on stressors). Better access to health as well as other services is an important distinguishing factor between households which transform their vulnerabilities and those which cannot. Table 3 compares food insecurity and malnutrition rates with health service coverage in the ten states of South Sudan. Health

service coverage is depicted through the number of health facilities and the ratios of key health workers (doctor, nurse, and midwife) per population. By comparing states according to their food insecurity and malnutrition averages, it is clear that states which are better off in terms of these wellbeing outcomes tend to also have higher access to medical personnel, and a higher number of facilities. For example. Warrap, with the worst food insecurity and malnutrition, also has the fewest nurses and midwives per capita of all states and among the fewest doctors per capita plus number of health facilities. Conversely, states with better food insecurity and malnutrition rates have more health workers per capita and health facilities.

Table 3: Health facilities and health workers by state

States	Food Insecure (%)	GAM (%)	Health facilities * (n)	Pop. per Doctor (n)	Pop. per Nurse (n)	Pop. per Midwife (n)
	Feb-15	*Feb-15*	*2011*	*2011*	*2011*	*2011*
Warrap	62.7%	21.1%	124	162,155	15,202	108,103
Jonglei	50.4%	19.5%	192	41,170	10,956	56,608
Unity	41.0%	19.0%	102	195,267	4,541	30,832
Northern Bahr el Ghazal	38.3%	19.7%	121	72,090	11,091	90,112
Western Equatoria	38.3%	1.8%	222	24,761	2,853	9,672
Lakes	34.1%	12.2%	108	40,925	6,268	33,130
Western Bahr el Ghazal	33.8%	12.0%	97	25,649	978	4,568
Eastern Equatoria	29.9%	10.0%	199	181,225	6,813	13,940
Upper Nile	29.6%	15.4%	191	24,727	2,047	17,221
Central Equatoria	28.4%	7.2%	258	11,377	1,981	6,165

Source: 2011 Highlights from health mapping, Ministry of Health

* this includes: county hospital, hospital, IDP clinic, mission hospital, other uniform service, outreach service, PHCC, PHCC+, PHCU, special hospitals, state hospital, tertiary hospital

7.3.6 Access to credit and formal safety nets or social protection

Access to credit is an important means for a household to transform its economic or social vulnerability. Cash on credit can be used to access services or invest in enterprises and other productive opportunities. Data on the percentage of households with access to credit might include information on those receiving either formal credit through banks or local systems (e.g. Village Savings and Loans Associations and Savings and Credit Cooperative Societies), or informal credit through relatives, neighbours, local traders and associates etc. This was not available for this analysis, but it has been noted that lack of access to credit is a primary constraint for business and market opportunities.

Social safety net (SSN) coverage is also critical to the building of longer-term resilience. This can be seen through households' enrolment in relevant programmes implemented by state or external social protection agencies. In the context of South Sudan, longer-term and non-contributory social safety nets capable of transforming vulnerabilities (and in addition to the food/cash for assets and limited cash transfer programmes already in operation) might include: cash or in-kind transfers to alleviate and prevent deepening of poverty in the medium to long term through assets creation; social insurance programs such as pensions, unemployment benefits and health insurance; general subsidies to benefit households, often for food, energy,

housing, or utilities; programmes that protect and enhance human capital and access to basic services, such as fee waivers for health and education; and livelihoods support such as relevant education and training, credit, and employment services. The World Bank reports that prior to the conflict, around 70 percent of SSN beneficiaries were reached through emergency food distribution; 14 percent through school feeding programmes; and a further 15 percent through cash for work and food for work interventions[119]. These interventions were almost entirely financed by donors.

Particularly where SSN are timely and predictable, they can enable a household to absorb a shock and to plan, adapt and transform despite stressors – without deepening their vulnerability.

7.3.7 Youth employment and empowerment

The resilience of future contexts and generations cannot be built or supported without building and supporting today's youth. This is especially true in a fragile context like South Sudan where they are not only a significant proportion of the population (70 percent of people in South Sudan are under 30) but they also play a central role in productivity, security and social cohesion.

Higher youth employment can mitigate 'negative coping' including participation in conflict, crime and cattle raiding. In South Sudan just less than half of persons aged 15-24 are employed[120]. This figure varies across contexts though - youth employment is marginally higher in rural rather than urban areas.

Youth representation in political processes at national and community level is another important indication of youth empowerment in the context of South Sudan where youth alienation and disaffection is a chronic stress on economy and society. While data was not available in this analysis, contexts where youth relations with traditional authorities as well as with formal state-centred authorities are perceived to be better are assumed to have stronger togetherness or cohesion.

'Youth' is often interpreted as male young people, often because the risk to resilience posed by male youth is arguably more prominent than that of female youth (not least their role as perpetrator and victims of insecurity). The empowerment of female youth in South Sudan is critical (see women's empowerment, below).

Productive and empowered youths keep a household and a community together in times of shock, particularly when the shock is conflict-related but also in the case of natural hazards such as droughts, floods, or disease outbreaks. In the face of so many other economic and social stressors, the role of youth as part of the solution rather than the problem is a very critical transformative capacity that distinguishes resilience.

Other transformative capacities for which there was no quantitative data available

Several transformative capacity indicators were identified in the literature review and in consultations, yet quantitative data was not available for them. These include women's empowerment (an individual but also higher level capacity), and community networks (a community level capacity).

119 World Bank, 2015
120 World Bank 2014c

7.3.8 Women's empowerment, attitudes and aspirations

In South Sudan, the empowerment of women reflects their capacity to contribute to society, services, governance, peace and productivity, and to do so unhindered by negative cultural norms or low social expectations. Qualitative data on gender in South Sudan reflects a clear difference between rural and urban contexts, where education and social norms can be quite different; and it is also a common assumption that trauma, SGBV and psychosocial distress affect the ability of women in parts of South Sudan to withstand shocks and positively adapt.

While related indicators include parity in education and employment as well as levels of SGBV experienced (see stressors section of this report), no conclusive quantitative data could be used in this analysis to investigate the assumption that women's empowerment is associated with higher resilience at household and community level. To understand the extent to which empowerment, attitudes and attitudes of women affect their ability to adopt effective strategies for coping and transformation despite shocks, it is hoped that future analyses can capture relevant data.

7.3.9 Community networks

In South Sudan, community networks (local groups, cooperatives or associations) are an informal safety net that assists households in hard times through sharing, lending or gifting food, livestock, cash and other necessary items. They often have structured governance and management systems for targeting, payment and repayment; and they tend to be more pronounced in rural areas, regions that experienced less displacement due to the recent conflict, and places of higher social cohesion. As well as networks within communities (supporting bonding), resilience is also thought to be determined by those between communities (supporting bridging), and those between communities and external agencies including NGOs and the state (supporting linking, important for accessing assistance in the event of shocks).

While important to resilience in any context, these networks in South Sudan are particularly vital given the country's fragility in terms of natural and man-made shocks, and the limits of government or externally provided social protection and safety nets, as well as conflict prevention and resolution mechanisms. Data on social and community networks was not available for analysis of the role this plays in household resilience, but further studies may explore this.

It is recommended that possible future analyses in this and other contexts consider what data might be available for these and other transformative capacity indicators understood as relevant to resilience.

Photo: © WFP/George Fominyen

Chapter 8: Resilience interventions (policies and programmes)

8.1 REVIEW OF EXISTING PROGRAMME AND POLICIES

Since its independence in 2011, many policies and programmes in South Sudan have been focused on sustainable development while maintaining humanitarian responsiveness, implicitly seeking to build resilience. The Government of South Sudan has led efforts to coordinate partner agencies in a common agenda for this, built on common understandings. While the crisis that broke out in December 2013 refocused efforts heavily on immediate, humanitarian needs, there are concerted inter-governmental and inter-agency efforts to build resilience that this section attempts to capture. It describes government momentum, the regional role of IGAD, and the efforts of partners with a focus on the United Nations and implementing agencies. Where relevant, it also indicates gaps or recommendations linked to policy and programming.

8.1.1 National policies and programmes

The government of South Sudan is committed to building resilience through partnerships, and based on evidence. At a workshop to review this analysis, government representatives spoke of shared commitment to support resilience for the most vulnerable in South Sudan, voicing the engagement of a range of ministries and the need for coordination between them as well as with partners.

The South Sudan Development Plan (SSDP), covering 2011 to 2016 but aligned with a broader 'Vision 2040', was designed as a plan for the new nation to address core development and state building agendas. Its vision of, "Realising freedom, equality, justice, peace and prosperity for all" contains elements of a multi-dimensional and integrated resilience building agenda. This includes four pillars: 1) Improving governance; 2) Achieving rapid rural transformation; 3) Improving and expanding health services; and 4) Deepening peace building and improving security. Initially the top priorities in implementation of the SSDP were listed as: 1) Peacebuilding and actions that enhance security; 2) Improving and expanding social services; and 3) Rural development built on infrastructure expansion.

Individual government ministries are responsible for programmes and policies that relate to the SSDP and Vision 2040, key examples of which are:

- **The Comprehensive Agricultural Master Plan (CAMP) of the MAFCRD.** CAMP is cited as a farmer-oriented and impact generating plan. It is a rolling plan for resource mobilisation and programme implementation over the short, medium and long term. Long-term, it aims to contribute to a stronger agricultural sector as part of Vision 2040, while short term it covers emergency responses for threats to agricultural livelihoods and productivity. In the medium term it addresses what is consistently described as a key risk or stress: weak public service delivery that inhibits sustained food security and agricultural growth. CAMP is very significant given the common perception, also expressed at a workshop to review this analysis, that secured and enhanced productivity is a bedrock of resilience in South Sudan.

- **The National Social Protection Policy Framework of the Ministry of Gender, Child and Social Welfare (MGCSW).** The overall goal of this framework is to address multiple vulnerabilities and secure livelihoods as well as access to social services for the most vulnerable. An integrated set of approaches, including cash transfers, are directed at vulnerable groups including orphans, widows, persons with disabilities and the poorest households. Coordinating all social protection initiatives nationwide and therefore an important backbone of resilience in South Sudan, the Framework's six objectives are: 1) Inclusive social protection: ensuring access to basic social services for all; 2) Protective environments for children; 3) Strengthened linkages among social protection, economic development and sustainable livelihoods; 4) Improved livelihoods for women; 5) A systems approach to social protection; and 6) Progressive realisation of coverage.

- While the ongoing conflict absorbs considerable energy and resources, it is broadly recommended that the government of South Sudan take greater ownership of this Framework and commit more of its own resources. It is also recommended that the design of social safety net interventions under the Framework enhance community participation, especially given low government capacity at local levels. This would not only ensure greater community ownership and likely sustainability, it would also be a chance to build upon informal personal and community-based systems of social safety nets. Alongside community participation, the role of private sector and NGOs would be valuable in ensuring inclusion and equity in social protection programming – particularly that marginalised groups as well as women and youth are represented on local committees and in community-planning processes.

- **South Sudan Youth Development Policy of the Minister of Culture, Youth and Sports.** This policy is intended to empower youth to influence democracy and peacebuilding in the country, and to include youth in the peaceful and productive nation-building and development agenda which cannot exist without them. Given the proportion of youth in South Sudan's population and the risks associated with them, ones which have been exacerbated since the recent conflict, this is a policy of critical importance. Amid calls for concrete and timely implementation are cautions that 'youth' be considered in its broadest sense to include rural, female and minority group youth who often risk being overlooked by youth-oriented policy initiatives.

- **National Environmental Policy of the Ministry of Environment**. This is premised on the principles of protecting and managing the environment on the basis of good governance, sustainable development, preventive principles, subsidiary principle, precautionary principle, scientific knowledge, skills and expertise principle and polluter pays principle. In 2014, the policy was tabled for cabinet and parliamentary approvals.

- **Disaster Risk Management Policy of the Ministry of Humanitarian Affairs and Disaster Management**. This document is still a draft and is currently structured into six key strategic focus areas identified in consultation with National Working Groups, State ministries and stakeholder consultations in various states. Focus areas include: 1) Establishing institutions for comprehensive DRM system and professionalising

the system; 2) Mainstreaming DRR across sectors; 3) Establishing institutions for multi-hazard early warning, emergency preparedness for effective response and strengthening their capacities; 4) Establishing disaster management information system and partnership with international and regional bodies, institutions and networks; 5) Empowering vulnerable communities through strengthening institutional mechanism at local government level; and 6) Expanding risk reduction programming. Even though the policy seems to be comprehensive, levels of implementation will be decisive in its effectiveness and should be monitored closely to ensure adequate levels of support are provided.

It is important to note that much of the earlier momentum around sustainable development and resilience was inevitably lost with the outbreak of conflict in December 2013, both in the Greater Upper Nile states and in the rest of the country. In late 2013, the relatively young Government of South Sudan and its partners were seeking to bridge humanitarian and post-conflict needs with longer-term intentions to build resilience and sustain development. Following the outbreak of a conflict yet to be resolved, the focus in many instances, and for many agencies, shifted again to a humanitarian agenda which meant the early momentum around resilience was largely put on hold. Priorities were realigned, with peace and security aims of multi-dimensional strategies becoming most critical.

This analysis represents one of the renewed efforts to bring together key partners and stakeholders to give new impetus to the resilience agenda in South Sudan.

8.1.2 Regional IGAD-IDDRSI strategy

A strategy for building resilience, supported by the regional Inter-Governmental Agency for Development (IGAD), is the IDDRSI Country Programme Paper (CPP) for South Sudan. Like those of other countries in the IGAD region, this is a 15-year strategy that identifies areas of intervention at both national and regional level to sustainably build resilience to drought. It is part of the IGAD Drought Disaster Resilience and Sustainability Initiative (IDDRSI), which aims at guiding and harmonising programmes to end drought emergencies in the region. An implementation plan for sequencing and layering components of the IDDRSI South Sudan strategy is needed, as well as guidance on how these fit with existing national strategies that combine government and development partner efforts.

8.1.3 Humanitarian and development partners

At a workshop to review this analysis, government representatives stressed the need for coordination and for 'a realignment of actors coming together to address resilience'. Partnering with government efforts to strengthen resilience include United Nations agencies as well as non-governmental and civil society organisations.

In July 2014, international development partners in South Sudan reviewed development support in response to the ongoing crisis. As funding to mitigate the humanitarian consequences had significantly increased, a number of development programmes had either been suspended or redesigned. Involved partners established the requirement for peace as a basis for re-launching a national development agenda, one which would continue to support capacity building with a strong focus on service delivery, governance and reconciliation. Accordingly, the UN Development Assistance Framework (UNDAF) was revised for the period 2014 – 2016 to reflect

the evolving situation and its immediate challenges; while maintaining its longer-term goals, a focus was placed on areas capable of delivering short to medium-term transformation in conflict-affected South Sudan. The result was these 5 UNDAF outcomes:

1) Core governance and civil service functions are established and operational;

2) Chronic food insecurity is reduced and household incomes are increased;

3) Key service delivery systems are in place, laying the groundwork for increased demand;

4) Violence is reduced and community security improves;

5) Access to justice and the rule of law improves.

The main partners for achieving the UNDAF are government line ministries and statutory bodies, non-governmental organisations (NGOs), civil society organisations (CSOs), bilateral and multilateral donors, and communities themselves. Partnerships with the private sector will also be pursued to achieve UNDAF outcomes and to foster corporate social responsibility as part of inclusive development of South Sudan. Partners are currently discussing an Interim Cooperation Framework (ICF) to replace the UNDAF during the period January 2016 to June 2017. The ICF permits maximum flexibility in programming, to support humanitarian responsiveness while laying foundations for longer-term development.

Key United Nations partner agencies (who in turn work with government through non-governmental, civil society and community organisations) will contribute to the UNDAF, and to a resilience agenda in general, in the following ways:

The United Nations Food and Agriculture Organisation (FAO) has resilience embedded in its South Sudan Country Programme Framework under Outcome Three, "Increased resilience of livelihoods to threats and crisis". This is anchored in FAO's global resilience agenda which is in Strategic Objective 5, "Increase the resilience of livelihoods to threats and crises". In South Sudan FAO has projects focusing on the following four pillars: 1) Govern risks and crisis: Institutional strengthening and risk and crisis management governance for agriculture, food and nutrition; 2) Watch to safeguard: Information and early warning systems for agriculture, food and nutrition and trans boundary threats; 3) Apply prevention and mitigation measures: Protection, prevention, mitigation and building livelihoods with technologies, approaches and good practices for agriculture, food and nutrition; and 4) Prepare and Respond to crisis: Preparedness and response to crisis affecting agriculture (including livestock, fisheries, aquaculture and forestry), food and nutrition.

The United Nations Development Programme (UNDP) is implementing an Integrated Crisis Prevention and Recovery (ICPR) programme which aims to strengthen national capacities for early recovery, peace building and reconciliation, in order to lay down a sound economic foundation and build community resilience, including the protection of livelihoods and food security. UNDP is also implementing a Food security, Emergency Flood Response and Recovery Project, to strengthen national, state and community capacities to mitigate the socio-economic impacts of floods and food insecurity. In the short term, the project will support communities directly affected by floods and food insecurity to prepare, and respond to these shocks.

The United Nations Children's Fund (UNICEF) is supporting the Ministry of Gender, Child and Social Welfare in designing a Child Grant Programme (CGP) that will cover 20 percent of children nationwide and bridge food consumption gaps in chronically food insecure families with malnourished children under five. The CGP will support the SSDP and the National Social Protection Policy Framework. The programme also aims to set up a contingency facility that can respond to nutritional needs of families with children outside the CGP's regular beneficiaries, through cash transfer in the case of disaster. UNICEF works with WFP, education authorities and school communities to support Food for Education and blanket de-worming as part of a broader Back-to-Learning initiative. Micronutrient support is among a broad range of interventions aimed at tackling malnutrition. UNICEF also integrates a life skills, peacebuilding education and conflict-sensitivity curriculum into the first ever South Sudanese education curriculum. Work is also ongoing with UNESCO to strengthen the Ministry of Science, Education and Technology's capacity to incorporate Climate and Disaster Risk Reduction into the national curriculum. As part of the Global Partnership for Education (GPE), school construction standards have been developed. UNICEF also supports access to safe drinking water, improved sanitation and hygiene practices through interventions such as allotment of water point locations, and promotion of Community-Led Total Sanitation (CLTS) in collaboration with the Ministry of Electricity, Dams, and Irrigation and Water Resources.

The World Bank supports resilience at the community and households levels, as well as supporting strengthened institutional resilience. For example, the Health Rapid results project works in Jonglei and Upper Nile focuses on: a) providing primary care to conflict-affected individuals; and b) building health systems. The Emergency Food Crisis, working through WFP, provides food aid to the most vulnerable populations, as well as supporting adoption of improved technologies for food production in Western Equatoria, Central Equatoria, Northern Bahr el Ghazal and Western Bahr el Ghazal states. The Local Governance and Service Delivery programme focuses on strengthening community engagement for local development activities in Warrap, Lakes, Eastern Equatoria, and Western Equatoria states, and builds capacity for development activities and public financial management functions of local governments. The World Bank's Safety Nets and Skills Development Project (SNSDP) provides safety nets through public works for the poor and vulnerable to smooth consumption gaps of households and develops skills of vulnerable youth to increase employability in Jonglei, Warrap, Eastern Equatoria and Juba City, and also works to build a social protection system in the country. The Private Sector Development programme focuses on supporting skills development of youth and micro-enterprise growth to provide greater opportunities for income generating activities in non-conflict-affected states. Finally, the World Bank aims at coordinating support to safety nets through its Safety Nets and Skills Development Project.

The World Food Programme (WFP) is implementing a Protracted Relief and Recovery Programme (PRRO) in the seven states of relative peace in South Sudan. This programme aims at higher quality resilience programming through evidence-based interventions and enhanced partnerships. WFP is improving existing programmes, integrating them into a more systemic approach as well as working to sustainably address the root causes of food insecurity. Activities under the PRRO include: Food Assistance for Assets which aims at building resilience of food insecure households through the creation of assets selected by communities; Nutrition Safety Nets; Food for Education to promote access and retention of children to schools; and Purchase for Progress (P4P) activities to leverage WFP's purchasing power to increase agricultural

production, quality and access to markets by smallholder farmers and also provision of timely and reliable food security information to support resilience programming. WFP has also maintained its support to establishment of a functional early warning and disaster preparedness system within the ministry of Humanitarian Affairs and Disaster management together with RRC. The early warning and disaster preparedness system is current being rolled out at state level and five pilot counties. Synergies are being strengthened between these activities as well as with partners' work.

The World Health Organisation (WHO) in South Sudan has designed programmes to reduce the vulnerability of poor communities in crisis-affected areas, by tackling the root causes of weak health development and supporting immediate recovery from stresses and/or recurrent crisis. WHO programmes that strengthen emergency preparedness and humanitarian action include: early warning and disease surveillance with a focus on conflict-affected populations; health systems; health promotion and protection; primary health care; polio eradication; and technical support in nutrition to the Ministry of Health, the Health Cluster and Nutrition Cluster Partners. WHO is currently supporting the Ministry of Health in coordinated cholera outbreak responses.

8.2 REVIEW OF COORDINATION MECHANISMS

Coordination mechanisms are essential to enhance partnership and harmonisation of approaches, non-duplication of efforts and coherence of interventions. In addition to the UNDAF framework, the following are identified mechanisms with potential for coordination of resilience efforts:

- **Social Protection Technical Working Group**: Set up in 2012, this aims to support the government of South Sudan achieve its strategic objectives in social protection, in particular by facilitating a system and sector wide approach, and by ensuring that ongoing and future donor funding is aligned with government's strategies for the sector. Before the conflict, this working group met monthly and was responsible for following up on key issues and activities within the sector. The working group was chaired by the Ministry of Gender, Child and Social Welfare, with World Bank and UNICEF acting as the Secretariat. Since the conflict, this coordination mechanism has faltered, and needs to be revitalised. A recently convened Partners Social Protection Working Group, made up by relevant stakeholders including UN Agencies, the World Bank, Donor representatives as well as National and International NGOs, may offer related support for social protection in South Sudan.

- **Disaster Risk Management Working Group:** The main purpose of this group is as a platform for exchange of information, and identification of policy directives for disaster management actions covering prevention, preparedness, relief and rehabilitation. It also aims to identify at-risk areas considering the various hazards and different administration capacities.

- **Steering Committees and Technical Management Committees:** These are organised at national and state level to ensure joint management and monitoring of activities by ministries, UN, NGOs, CBOs and other relevant organisations. Committees

coordinate a diverse range of activities at state level, for example WFP Cash/Food for Assets since 2012, the Food Security and Livelihood Clusters, and the World Bank-funded government Safety Net Public Works programmes since 2015. Currently there are five Steering Committees and Technical Management Committees in Easter Equatoria, Lakes, Warrap, Western Bahr el Ghazal and Northern Bahr el Ghazal. They are chaired by the State Ministry of Agriculture and co-chaired by WFP.

- **Humanitarian Clusters:** These play an important role in South Sudan, although they can be limited in participation and mandate given their focus on humanitarian aid.

The consultative technical workshop highlighted the efforts of all these mechanisms, while pointing out some gaps that need to be filled:

At **national level**, platforms and coordination mechanisms need a wider participation of both development and humanitarian partners, to adjust for the fluid borders between development and humanitarian work in the current South Sudan context. Participation also needs to be more stable and regular. Focus should be enhanced on more operational coordination and enhanced synergies between different programmes. While information sharing is extremely useful, there is a need to refocus on more practical coordination with a degree of decision making.

At **state level**, the need for stronger platforms to support operations closer to the ground was echoed by all stakeholders. Existing coordination provides an opportunity to encompass a larger group of partners investing in resilience-oriented activities across different sectors.

8.3 FUTURE COMMON ACTION PLAN

It is a recommendation of several government and non-government agencies that there be a multi-agency plan of action to address key stressors and shocks in South Sudan and to strengthen resilience capacities at different levels. This report hopes to provide the momentum and a useful foundation for the vision, joint analysis and common action plan required. Implementation of a common action plan should be coordinated either through existing mechanisms or a dedicated new one.

The action plan may be covered by existing agreements but must have clear indications on timeline, roles and responsibilities to meet expected outcomes against identifiable and verifiable indicators. While it is recognised that an M&E framework does not yet exist to comprehensively capture resilience, and its creation might overburden existing systems, it is feasible to propose and agree on existing indicators that could be used, or specific new ones that could be added to existing M&E systems. This is a possibility that can become realistic only if inter-agency players commit to strengthen existing M&E systems to generate the indicators agreed upon. Integrating resilience-relevant indicators into the existing M&E frameworks of each concerned stakeholders would result into an easier and more systematic follow up on the resilience monitoring by the relevant coordination platform.

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Chapter 9: Conclusion

This RCA paper presents in detail some of the unique challenges South Sudan is facing while depicting existing capacities which can be leveraged to increase resilience to shocks and stressors that impact food insecurity and malnutrition. The analysis focuses on household level and looks at differences between genders, urban and rural contexts, and states.

What emerges is a picture of a country that was in the midst of state-building and development ambitions when latent tensions and the conflict - which affected the three Greater Upper Nile states - have deepened existing economic and social vulnerabilities while creating new ones. In particular the RCA highlighted, among others, the following constraints and areas of interest for resilience strengthening that appear to have worsened due to shocks related to the conflict:

- the relative disempowerment of under-educated;
- under-employed and at-risk women and youth;
- the risks faced by children and women in terms of SGBV;
- the constraints faced by producers in both customary rural and emerging urban economies;
- vulnerability of new groups of 'ultra-poor' including the newly migrated urban poor seeking for security and services, and of vulnerable displaced persons across the states; and

The chronic burdens of malnutrition, food insecurity and disease in many households.

Conflict is not the only shock: South Sudan is repeatedly exposed to high food prices and decreasing purchasing power; natural shocks including flood, drought; and human, and animal or crop disease outbreaks. Overlapping or in succession, these shocks leave little time for recovery.

Shock impacts are compounded by interrelated stressors: endemic disease and morbidity; displacement pressures due to local and natural resources based conflicts; access to markets and services; limited access to quality education; poor access to water and sanitation; lack of social welfare/protection; low productive capacity and technology; and limited employment opportunities. The analysis of stressors revealed that while the customary livelihoods of pastoralism and agriculture need comprehensive support and security, urban households, and urban vulnerabilities, are increasingly relevant and in need of targeted interventions as well as better understanding. It also reinforced understanding of 'at-risk' demographics including young people, women and children.

In the attempts to inform resilience-strengthening programmes, the RCA identified a wide range of capacities relevant to sustaining food and nutrition security in vulnerable households exposed to the above shocks and stressors. Non-resilient households rely on less diversified income sources, lower cash and livestock availability, more limited labour capacity and access to markets and services. In particular, they are affected by a relative lack of livelihoods support,

education and health care. Furthermore, non-resilient households have more limited access to safe water and improved sanitation facilities, as well as to credit, early warning systems and conflict management or justice arrangements. Empowerment of youth and women, psychosocial wellbeing and the presence of community networks and formal social safety nets also emerged as capacities distinguishing resilient and non-resilient households.

Table 4 below provides a comprehensive overview of all capacities identified as resilience-relevant by the RCA disaggregated by type. It also includes the ongoing policies contributing to strengthen them, as well as the concerned stakeholders and geographical targeting. The table is the final outcome of the in-depth analysis of quantitative and qualitative secondary data conducted by the RCA, compounded and corroborated through consultations with all humanitarian, developmental, governmental and non-governmental stakeholders active at different level on resilience in the country.

Table 4: Existing Programme and Delivery Modalities, Actors, Constraints and Targeting that strengthen resilience capacities in South Sudan

CAPACITIES INDICATORS (with definitions)	Indicators	Ongoing Work			What to improve	Geographical Targeting of Current Activities/ Additional from consultation
	Existing/Proposed	Programme/Implementation Modalities	Specific Output	ACTORS	Challenges/constraints (C)-Solutions (S)	
ABSORPTIVE						
Coping Strategies It expresses a household's difficulty in coping with a shock or stress. It refers to food-related coping (expressed as reduction in quality/quantity of meals etc.) as well as other negative short to mid-term coping strategies.	CSI (reduced and livelihood coping)	Cash transfers		DCA, Solidarités International, OXFAM, CRS, LWF, HDC, C&D funded by DCA, BRACED Consortium (ACTED, CONCERN), WB (Safety Nets & Skills Dev.)	**C:** Underdeveloped financial systems, lack of mobile banking, dual exchange rate, insecurity	including Jonglei (Bor, Duk, Twic East), Lakes and Upper Nile, Central Equatoria, Eastern Equatoria, Jonglei, *Unity, Jonglei*
		Child grant programme	bridging food consumption gaps in chronically food insecure families with malnourished children under the age of five	UNICEF, WFP		Country wide
		Distribution of emergency livelihood kits (crops, vegetables and fishing)	Stockpiling of emergency protective equipment and supplies at the community level	FAO, UNDP		Lakes, Jonglei, Upper Nile and CES, *Lakes, Jonglei*
		Cash For Assets/Food For Assets programmes (C/FFA)	1. Economic and physical food access of households increased; 2. Market integration increased (infrastructure, feeder roads, storing equipment)	WFP		Greater Equatoria, Greater Bahr el Ghazal
		Cash based interventions		WFP		Northern Bahr el Ghazal, Lakes (POC), Juba POC
Asset Ownership Number and value of material (non-productive) assets owned by a household. It is a proxy for wealth that indicates households more or less able to absorb a shock through changes to livelihood strategies based on liquidation of assets.	*Household Asset Score;*	Seed distribution, green houses		UN Women, FAO, WB (Emergency Food Crisis Response Project)	**C:** Focus has been household emergency oriented **S**. Coverage of community infrastructure to integrate into the value chain and linkage with markets	WSE, Lakes, Warrap, CES, Jonglei, WBG, NBG, Upper Nile
		Organisation of seed fairs, seed multiplication. Distribution of fishing kits, farming tools/kits.		FAO		Country Wide
		Fuel Efficient Stoves distribution		UN Women, FAO		

CAPACITIES INDICATORS (with definitions)	Indicators	Ongoing Work			What to improve	Geographical Targeting of Current Activities/ Additional from consultation
	Existing/Proposed	Programme/Implementation Modalities	Specific Output	ACTORS	Challenges/constraints (C)-Solutions (S)	
Livestock ownership (Key asset – in terms of productivity, nutrition and status – which helps a household absorb shocks or stresses).	1. Livestock sales; 2. Owning of livestock; *3. Tropical Livestock Unit;* *4. Livestock Prices* *5. Number of different types of animal owned*	Fortifying Equality and Economic Diversification	Provide women and men with appropriate farming, livestock, and fishing inputs.	World Vision, Oxfam, CARE	**C**. Need to avoid creating dependency on the consortium to provide inputs; poor support of supply side, and value chain development; policy development and attitude/ cultural transformation; Transborder/ in-country livestock movement resulting in spreading of diseases; Inter-Communal/ tribal conflicts/ livestock raids. **S**. Start distribution process with the expectation for cost sharing. Refer to inputs as investments in small businesses; Transborder/ in-country disease surveillance; Conflict management.	*WBeG; NBeG*
		Animal health		VSF, FAO		Country Wide
		Restocking		CRS		
		Rehabilitation of the cold chain facilities across states		FAO		
		Enhancing cross border trade and management of transboundary livestock diseases		FAO		
		Animal Health Treatment and Vaccination Campaigns	1. Conflict Resolution & Community Peace Building Activities enhanced; 2. Livestock production enhanced; 3. Meat market support (e.g. cold chain)	FAO		GBeG
		Ox plough project	Food security through livelihood (for peacebuilding purposes)	UNICEF		
Expenditure It indicates a households' access to cash for basic needs (i.e. food) that can be used in the event of a shock or stress.)	1. Total monthly expenditure; 2. *Food Expenditure share; 3. Per capita expenditure*	Cash Assistance		WFP, FAO, UNICEF, WB	High inflation in South Sudan; fragile markets	Juba POC, Mingkaman (Lakes), Jonglei, Central Equatoria, Eastern Equatoria; *NBeG, Unity*

CAPACITIES INDICATORS (with definitions)	Indicators	Ongoing Work			What to improve	Geographical Targeting of Current Activities/ Additional from consultation
	Existing/Proposed	Programme/Implementation Modalities	Specific Output	ACTORS	Challenges/constraints (C)-Solutions (S)	
Psychosocial Strength (It is evidence of behaviours, attitudes or motivations that support positive adaptation in the face of shocks or stresses. Certain behavioural or attitudinal capacities allow an individual and their household to overcome adversity during a shock/ stress)	1. % of protection concern for which corrective measures have been developed in collaboration with non-HCT members; 2. % of SGBV survivors registered who have received support services; 3. Coverage (%) of the region targeted with functional referral system for children and adolescents in needs of protection [Protection Cluster monitored indicators *4. Assistance from friends and relatives.* *5. Membership of informal groups like farmer associations etc.*	Gender based violence policy		UNFPA, UN Women, Health Cluster strategy HRP 2016 (Improved access to psychosocial support and mental health services related to SGBV response)	C. Usually linked to conflict/ insecurity issues instead of within the normal circumstances; Limit is actually being able to identify when conflict has been avoided.	*Unity, Jonglei*
		Safe places		UN Women		
		Reinstating community structures for improving coping mechanisms. Also training community members in resilience and conflict resolution.	1. # of groups created. 2. # of individuals taking part in groups. 3. # of community members trained in conflict resolution and through workshops	IOM		Bor/Bentiu
		Trauma healing and psychosocial support *(Work in Selected sites- Schools and PoCs to deal with post traumatic issues in children*	Train animators and patrons, establish baselines using tools like Cries Scale 13, RCMA and DSRSC, arrange therapy sessions for group (clubs) and individual cases	UNICEF		
		Children friendly spaces: Life skills and psychological support	1. Diversification of livelihoods opportunity improved to meet aspirations and to dignify work 2. Investments in education in urban and rural settings enhanced; 3. Protection issues reduced.	UNICEF, UNESCO		
		SGBV intervention		UNICEF		
Savings and informal Safety Nets Availability of disposable cash savings at household level indicates capacity to spend money to absorb a shock. The presence of informal safety nets show forms of social capital or networks exist for a household to rely on in times of need.	% of households receiving timely help from friends/ relatives in the event of a shock– whether in food, cash, labour or other.					*WES, WBeG, Unity*

CAPACITIES INDICATORS (with definitions)	Indicators	Ongoing Work			What to improve	Geographical Targeting of Current Activities/ Additional from consultation
	Existing/Proposed	Programme/Implementation Modalities	Specific Output	ACTORS	Challenges/constraints (C)-Solutions (S)	
Conflict management & Justice (Presence of customary or formal means to resolve local disputes or conflicts indicates local capacity to resolve disputes/conflicts that arise and could undermine wellbeing, development, economy and society.)	1. Record of insecurity / violence episodes and lack of movement by state/county; 2. *Population trend in POC and IDP sites*	Fortifying Equality and Economic Diversification	Community ability to resolve and manage conflict and maintain peace increased	World Vision, Oxfam, CARE		*Unity, Jonglei*
		Peace Education and Peacebuilding		World Vision, Oxfam, CARE		
		Survey and Clearance of Explosive Remnants of War	Communities will not have to absorb the impact of landmines and explosive remnants of war	UNMAS		
		Dialogue to promote trade and development. Small community grants, and trade plans.	Increased: 1. Dialogue sessions; 2. Community constructions (markets/schools etc.)	IOM		
		Integrated Crisis Prevention and Recovery (ICPR) Programme	Social Cohesion and community peace restoration promoted	UNMISS, UNDP		
		Peacebuilding education and advocacy	Promote social cohesion and resilience	UNICEF		
ADAPTIVE	**Existing/Proposed indicators**	**Programme**	**Specific Output**	**ACTORS**	**Constraints/ Solutions**	**Geographical targeting**
Livelihoods risk diversification (Number of different livelihood activities or sources of income employed by a household indicates the plurality of livelihood activities, which means that if one household income is affected by a shock, there are others to be relied upon. Diversity of livelihoods ensures they are not all affected by the same shocks.)	Number of income activities	Fortifying Equality and Economic Diversification	Communities prepared against natural shocks	World Vision, Oxfam, CARE	C: Information and early warning; limited scope of options utilised; inadequate integration into government systems to ensure sustainability S. Increase linkages with FAO, County Agricultural Department and other relevant units to provide relevant information in a timely manner	
		Farmer field schools, Commercialisation of agricultural sector in marginal areas focusing on women and youth		FAO		
		Value chain development in South Sudan, Uganda and Kenya - transboundary project in Karamojong cluster		FAO		
		Zonal Effort for Agricultural Transformation - (Improved food security for rural households - ZEAT BEAT)		FAO		Greater Bahr el Ghazal
		Livelihood interventions	Reliable and Sustainable Livelihoods and income sources diversified to limit shocks-exposure	FAO, WFP, WB		Greater Equatoria, Greater Bahr el Ghazal
		Gender sensitive value chain analysis		UN Women		Warrap, WE, EE, CE, Lakes
		Support to cooperatives		UN Women		WE
		Agro-processing and packaging technologies		UN Women		WE
		Good agronomical practices training (GAP)		UN Women		WE, Lakes and EE

CAPACITIES INDICATORS (with definitions)	Indicators	Ongoing Work			What to improve	Geographical Targeting of Current Activities/ Additional from consultation
	Existing/Proposed	Programme/Implementation Modalities	Specific Output	ACTORS	Challenges/constraints (C)-Solutions (S)	
Improved access to productive and fertile land Evidence of the size and quality of a household's available land indicates productive capacity of a household to adapt to shocks/stresses through diversified land use.	Land size under cultivation	Study on women's rights to land; advocate for women's rights and property at community level		UN Women	C. Customary law and practices currently supersede constitutional law. S. Continued education at local levels about the equality for men and women provided in the Land Act 2009 and the Transitional Constitution .	WE, EE, Lakes, Warrap, WBG, CE;
		Organizational development needs assessment of key CSOs engaged in advocacy of women land rights and agriculture	Women's access to productive assets and land rights increased	World Vision, Oxfam, CARE		
		Land release following Non-Technical survey to determine land is free of mines and unexploded ordnance	Community capable of using reused land for agricultural purposes	UNMAS		
		Conservation Agriculture, Farmer Field Schools and Climate Change Adaptation	1. Reduced factors leading to low planted area (conflict, etc.) 2. Promote soil fertility enhancement measures 3. Conflict resolution to increase planted areas 4. Increase utilisation of marginal lands (50 percent of arable land not used to date).	FAO, WFP, WB		*Greater Equatoria*
		Conservation agriculture - integral in extension strategy across projects		FAO		
Income Source Reliability and Sustainability (ISRS) ISRS refers to all income sources which do not contribute to deplete the natural resource base, do not prompt competition over resources, and thus do not compromise human and social capital.	1. ISRS; *2. Main sources of income; 3. Income diversity dependence ratio; 4. Casual Labour wages*	Livelihoods intervention	1. Reliable and Sustainable Livelihoods 2. Diversified income sources to limit shock-related exposure and food insecurity	FAO, WFP, WB	C. Economic downturn during the crisis	Greater Equatoria, Greater Bahr el Ghazal; *WBeG; WES; Unity; NBeG*

CAPACITIES INDICATORS (with definitions)	Indicators	Ongoing Work			What to improve	Geographical Targeting of Current Activities/ Additional from consultation
	Existing/Proposed	Programme/Implementation Modalities	Specific Output	ACTORS	Challenges/constraints (C)-Solutions (S)	
Skilled/salaried Household Labour (Salaried or skilled labour refers to the presence of household income produced through the specific skills and know-how (whether manual or intellectual) acquired by one of its members. It is usually unrelated to the use of natural resources, as agriculture or pastoralism thus not subject to climatic/ natural shocks.)	Percent of households involved in skilled and salaried labour (FSNMS)	Skills Development Programmes	Skills developed to successfully enter the labour market, both in rural and urban areas	WB, UNICEF, WFP		Central Equatoria, Eastern Equatoria
		Food for Training; Training programmes	Competitiveness of South Sudanese labour in the national market increased.	WFP, UNICEF		Country wide
Remittances External sources of income not affected by local shocks and stresses that serves as a safety net in times of need. They include transfers of money (payment or gifts) from a source outside the household (often a relative outside the country).	*Average value of monthly remittances over the last 12 months (absolute value and proportion of the household's budget)*					
Seasonal Migration Adaptation through mobility, and flexibility of livelihood strategies along seasonal lines. It can be measured through evidence of seasonal movements in search of employment – e.g. rural-urban migration to towns for work collecting water, domestic labour etc.	*1. Percent of households with members who migrated seasonally 2. Average amount of remittances received by households*	Vaccination of livestock for asset protection		FAO		*WBeG; NBeG*
		Building haffirs [rainwater dams] along livestock migration routes		FAO		Jonglei
		Provision of veterinary and extension services		FAO		
			1. Ordinary seasonal migration is enhanced 2. Conflict resolution measures limiting freedom of migration put in place (e.g. safe corridors implemented)	UNDP		

CAPACITIES INDICATORS (with definitions)	Indicators	Ongoing Work			What to improve	Geographical Targeting of Current Activities/ Additional from consultation
	Existing/Proposed	Programme/Implementation Modalities	Specific Output	ACTORS	Challenges/constraints (C)-Solutions (S)	
Educated household head (The education of a household head is important in determining their household's ability to positively adapt in the face of shocks/stresses. This capacity can be measured through the percentage of households whose 'head' has been educated to at least primary level)	1. Completion rate (primary school); 2. *Education level of the head of household - primary level (to be captured)* *Number of educated household members*	Pastoral education		FAO, UNESCO		Lakes
		Back to Learning Initiative; in synergy with Food for Education	1. Assistance for literacy improvement provided 2. Education system supported	UNICEF, UNESCO, WFP		Country wide
		Literacy Imitative for Empowerment (LIFE) Phase 2	1. Assistance for literacy improvement provided 2. Education system supported	UNICEF, UNESCO		
		Functional Adult Literacy Programme	1. Assistance for literacy improvement provided 2. Education system supported	UNICEF, UNESCO		
		Adult literacy classes in POCs		UN Women		CE, Warrap, WE, EE and Lakes

CAPACITIES INDICATORS (with definitions)	Indicators	Ongoing Work			What to improve	Geographical Targeting of Current Activities/ Additional from consultation
	Existing/Proposed	Programme/Implementation Modalities	Specific Output	ACTORS	Challenges/constraints (C)-Solutions (S)	
Early Warning & Disaster Mitigation Systems (Presence of local systems to avoid or withstand disaster, including surveillance or early warning systems, and to manage effects of known shocks indicates local capacity to predict shocks and/or avoid, mitigate and withstand their effects.)	Emergency Preparedness Capacity Index	Fortifying Equality and Economic Diversification	Communities organised and prepared to respond to natural shocks	World Vision, Oxfam, CARE		*Unity, Jonglei*
		Agriculture Food Security Information Systems;		FAO		
		Regular Alerts		FEWSNet		
		Support to community based disaster risk reduction		FAO		Lakes
		Analysis on climate risk, pests monitoring and control	Mapping hazards completed and duly incorporated into EW/EA measures	FAO, UNDP, UNICEF, WFP		Country wide
		Community management risk reduction.		DCA, LFW, Cordaid		
		Mine risk education to affected communities	Communities know how to mitigate the risks of mines and explosive remnants of war	UNMAS		
		Support to preparation of the National Adaptation Programme of Action for Climate Change	(1)National adaptation programme of actions developed through a participatory process to address the most urgent and immediate climate related risks. (2) Raise awareness among policy makers, planners and legislators on the importance of linkage between climate change and security over natural resources (3) Provide support in integrating conflict and security aspects in preparation of climate change adaptation and biodiversity strategies as well as other relevant national policies and plans (4) Provide support in strengthening of existing structures, processes and systems for addressing the issue of conflict and climate change at different levels of government	UNEP		Nationwide
		Building Resilience of Communities and local government to Climate Change and Natural Disasters for sustainable development and human well-being.	(1) promoting development and use of climate science for policy making and informing the climate change negotiation process; (2) facilitating access to, and supporting capacity building efforts for finance for climate resilience, energy efficiency and renewable energy technologies; (3) fostering climate change awareness and education; (4) supporting development and implementation of policies, plans and climate actions; (5) Support establishment and rehabilitation of early warning infrastructures and systems, both at the state and community level (6) Dissemination of weather data to farming and pastoral communities	UNEP		Country wide
		EWARN - Early Warning Alert and Disease Network (IDP sites)	Surveillance of priority epidemic-prone diseases, mortality (CMR and U5MR) and nutrition	WHO/MoH		
		Capacity building for EWS at state level	State level hazard mapping for EWS	FAO, UNDP, UNICEF, WFP		Country wide
		Building capacities at state and county level for local authorities.	State level and county level capacity development on EW and preparedness	WFP		

CAPACITIES INDICATORS (with definitions)	Indicators	Ongoing Work			What to improve	Geographical Targeting of Current Activities/ Additional from consultation
	Existing/Proposed	Programme/Implementation Modalities	Specific Output	ACTORS	Challenges/constraints (C)-Solutions (S)	
TRANSFORMATIVE	**Existing/Proposed indicators**	**Programme**	**Specific Output**	**ACTORS**	**Constraints/ Solutions**	**Geographical targeting**
Access to Market and Infrastructures (It indicates the ability to transform productivity into livelihood security. It can be measured through the distance to a feeder market, or main market, for sale or agricultural, livestock-related, and other local products)	1. Average travel distance by household; *2. Number of chief-town & communal markets by county/ State;* *3. Km of feeder roads existing by county/ state* *- distance to markets* *- access to electricity);* *4. Number of traders/ middle men active in the area (by season);* *5. Indicative volumes of traded commodities;* *6. Farmers groups/ associations;* *7. Blacksmiths;* *8. Storage infrastructure and capacity;* *9. Community Animal Health Workers (CAHWs) and access to drugs/vaccines;* *10. Extension services: Government, NGOs, gender/women extension workers;* *11. Access to Market Information* *- Dwelling wealth Index* *-Infrastructure index*	Fortifying Equality and Economic Diversification	Male and female farmers' access to market systems increased and equalised	World Vision, Oxfam, CARE		*Unity*
		ZEAT BEAT project on value chain development and market access		FAO		Greater BeG
		Purchase for Progress	1. Economic and physical food access of households increased 2. Market integration increased (infrastructures, feeder roads, storing equipment to reduce stock losses)	WFP		Greater Equatoria; Northern Bahr el Ghazal
		Feeder Roads Operation	1. Market integration increased (infrastr., feeder roads, storing equipment to reduce stock losses) 2. Infrastructural gaps (e.g. (electricity, roads, water, schools) which limit job creation and livelihoods diversification reduced.	WFP, WB (Rural Roads Project)		Greater Equatoria; Greater Bahr el Ghazal
		FFA - roads rehabilitation	1. Market integration increased (infrastructures, feeder roads, storing equipment to reduce stock losses) 2. Infrastructural gaps (e.g. (electricity, roads, water, schools) which limit job creation and livelihoods diversification reduced.	WFP, WB (Rural Roads Project)		Greater Equatoria; Greater Bahr el Ghazal
		Supply chain interventions (e.g. Support to local storage system, distribution of processing through cooperatives and women groups, linking women cooperatives to agricultural services and markets)		UN Women		Lakes, WE, EE;
		FARM Project		USAID		Greater Equatoria region (Greenbelt)

CAPACITIES INDICATORS (with definitions)	Indicators	Ongoing Work			What to improve	Geographical Targeting of Current Activities/ Additional from consultation
	Existing/Proposed	Programme/Implementation Modalities	Specific Output	ACTORS	Challenges/constraints (C)-Solutions (S)	
Access to Education (It indicates ability to access primary education For secondary education or above, it indicates the ability to access opportunities for maximising traditional livelihoods or attaining non-traditional and professional livelihoods. For primary education it is usually measured as the distance to nearest primary school in kilometres or time to reach there. For secondary or higher education, it can be described as the evidence of physical as well as financial and social access to education at secondary school, college, university or other higher level.)	1. Literacy Pupil Retention; *2. Economic access to schools; 3. distance to the nearest schools*	Enhanced knowledge and education for resilient pastoral livelihoods in South Sudan		FAO		Lakes
		Farmer Field Schools, Pastoral Field Schools		FAO		
		Financial and business skills for women farmers, entrepreneurship skills		UN Women		
		Food for Education	Reduce under-nutrition and break the intergenerational cycle of hunger through increased access to education.	WFP		Country wide
		Education Sector Strategic Planning and Coordination	1. Schools and equipment provided with sufficient standards; 2. Skills of teachers improved.	UNICEF		
		Global Partnership for Education and Learning for all initiative.	Physical access to education facilities enhanced	UNESCO		
		Back to Learning for Out of school children		UNICEF		
		Access to primary education		UNICEF		
		Literacy and numeracy		UNICEF, UNESCO		
		Support to Ministry of Education, Science and Technology to incorporate climate and disaster risk reduction in the national curriculum		UNICEF, UNESCO		Lakes, WE, EE and CE;
Support Land & Livelihoods (land tenure and pastoralism policy). (It indicates capacity to maintain land access and use, for livelihood and food security. The existence of policy or regulatory frameworks that recognise formal and customary land tenure, prevent 'land grabbing' and have the authority and ability to resolve land disputes)	*1. Communal land tenure arrangements; 2. agreements between farming communities and herders/pastoralists*	Study on women's rights to land		UN Women		*Unity*
		Advocate for women's rights and property at community level		UN Women		WE, EE, Lakes, Warrap, WBG, CE
		Organisational development needs assessment of key CSOs engaged in advocacy of women land rights and agriculture		UN Women		
		Support government and communities to enhance ruling frame for land tenure.	1. Sustainable grazing land and water resources promoted in rangelands 2. Soil fertility enhancement measures put in place to ensure limited pressure on natural resources in fragile pastoral and agro-pastoral ecosystems	FAO		
		Released lands to communities free of mines and unexploded ordnance, working with the national mine action authority to ensure land rights	Communities use the land	UNMAS		

CAPACITIES INDICATORS (with definitions)	Indicators	Ongoing Work			What to improve	Geographical Targeting of Current Activities/ Additional from consultation
	Existing/Proposed	Programme/Implementation Modalities	Specific Output	ACTORS	Challenges/constraints (C)-Solutions (S)	
Access to Water and Sanitation It indicates having access to adequate water and improved sanitation facilities for maintaining human health and nutrition, and reducing vulnerability to disease.	*1. % households with access to safe drinking water* *2. % households with access to minimum volumes of drinkable water daily per person* *3. % households with improved toilets and using proper waste disposal*	Access to water for pastoral production/ migration		FAO		Jonglei
		Infrastructures and rehabilitation of WASH infrastructures	Access to drinkable water meeting the minimum quality standards enhanced	UNICEF		*WBeG; NBeG; Unity; Jonglei*
		Dutch government Emergency WASH and FSL, DFATD Emergency WASH and Nutrition		World Vision		
		Cholera operational response coordination, development of contingency plan for epidemic preparedness and response at all levels, risk ass.mt and advocacy WASH interventions.		WHO		
		WASH provision	Latrines/sanitation facilities	IOM		
Access to Health Service (The distance to nearest health centre/facility in km or time to reach there indicates the capacity to maintain health and prevent diseases.)	1. Distance to functional health service facilities; 2. % of households by rating of the quality of medical treatment in their area; 3. Population per doctor/nurse; *4. Population per bed in health centres/ hospitals;* *5. N. of consultations in PHC facilities including in POC;* *6. Rate of global acute malnutrition in children;* *7. % of PHC facilities that integrate nutrition services (pop coverage info would fit better)*	JHPIEGO Tambura, JHPIEGO Juba, Health Pooled Fund, Health Rapid Results (Primary Health Care, capacity development)		World Vision, WB (Health Rapid Results)		Gogrial West, Tonj North and Gogrial East, Jonglei, Upper Nile' *Unity; WBeG; NBeG*
			Improved access to health services meeting the minimum quality standards - **WHO/HEALTH CLUSTER:** to strengthen the collection, collation and analysis of information on the availability of health resources and services in GREATER UPPER NILE through **HeRAMS** (Health resources and services availability mapping system). Key information: functionality status, accessibility, health infrastructure, human resources, availability of health services, equipment, medicines at primary and secondary care level.	WHO, UNICEF, UNDP, UNFPA		
		Emergency health care services, vaccinations, referrals and treatment and maternal care	Increased access to: 1. Vaccines 2. Information sessions 3. Emergency care 4. Treatment and preventative medicine	IOM		

CAPACITIES INDICATORS (with definitions)	Indicators	Ongoing Work			What to improve	Geographical Targeting of Current Activities/ Additional from consultation
	Existing/Proposed	Programme/Implementation Modalities	Specific Output	ACTORS	Challenges/constraints (C)-Solutions (S)	
Access to credit & Formal Social Safety Nets (SSN) or social protection It indicates the capacity to transform a household's economic or social situation through access to cash that can be used to purchase or invest in services, enterprise or opportunities.	1. SSN Coverage; *2. Distance from closest saving/ credit facility (micro-finance institution/ bank);* *3. Number of households having accessed credit over the last 3 months & transfers/ assistance from international agencies, charities and NGOs*	Village Saving and Loans Associations (VSLAs)		FAO, CRS, UN Women, UNICEF		Greater Bahr el Ghazal, Jonglei, Lakes (POC)
		Cash for Assets activities	Increase assets to promote sustainable natural resource management	WFP		
		Livelihood interventions	Increase access to income opportunities	FAO, WFP, WB		Greater Equatoria, Greater Bahr el Ghazal
		Community/agro pastoral schools	Increase enrolment and access to education	FAO, UNICEF		
		Skills Development and Public Works	Formal Safety Nets Provision well-coordinated and structured	World Bank		
Women empowerment attitudes and Aspirations It indicates the capacity of women to be part of society and be productive in ways that have the potential to mitigate effects of shocks and stress and enhance food and livelihood security.	*1. Percent of women engaged in sustainable income generating activities;* *2. Percent of women engaged in safety nets; 3. percent of households having women accessing credit*	Fortifying Equality and Economic Diversification	Civil society organizations' understanding of women's entitlements and protection rights in agriculture and livestock increased	World Vision, Oxfam, CARE	C: Deeply entrenched and internalized beliefs about women's inferiority and inability to own property S: Continued education and support for group IGAs.	Country wide
		Gender analysis		UN Women		
		Income Generating Activities in POCs & other states	Sustainable livelihoods training in catering, tailoring, hair-dressing	UN Women, UNDP, WB (Private Sector Development Project)		CES, Lakes, Greater Equatoria, WBG, NBG, Lakes
		Gender awareness workshops for attitude change		UN Women		
		Capacity awareness building of financial institutions to change gender bias in lending practices		UN Women		
		Village Saving and Loans Association		UN Women, UNICEF		
		Establishment and support to women cooperatives and groups	1. Professional trainings access to women enhanced 2. Employment opportunities for women ensured.	UN Women		
		Girls incentive	Education access to girls and women promoted	WFP		Greater Equatoria; Greater Bahr el Ghazal

CAPACITIES INDICATORS (with definitions)	Indicators	Ongoing Work			What to improve	Geographical Targeting of Current Activities/ Additional from consultation
	Existing/Proposed	Programme/Implementation Modalities	Specific Output	ACTORS	Challenges/constraints (C)-Solutions (S)	
Community networks It indicates capacity for bonding (within communities), bridging (between communities) and linking (between communities and higher levels including state) in ways that mitigate risks, forge collective solutions to shocks and stresses, and reduce underlying causes of vulnerability.	*1. Number of community groups operating (e.g. Savings clubs)*	Peacebuilding education and advocacy	Promote Peacebuilding Dialogues, build capacity on Peacebuilding , establish peacebuilding clubs in schools, cattle camp and PoC, Strengthening Youth Union, strengthen women financial literacy, Goal setting through career Fairs, Promotion of Social Cohesion and Resilience	UNICEF, World Bank (Local Governance and Service Delivery Project)		Eastern Equatoria, Western Equatoria, Warrap; *WBeG; NBeG; Warrap; Unity; UNS; Jonglei*
Youth employment and Empowerment It indicates a productive economy for the whole society, and the capacity for youth – through gainful employment – to avoid negative coping including insecurity, crime and raiding	*1. percent of youth employed*	Computer skills development for both girls and boys		UN Women		CE, WE and Lakes
		Skills development	1. Access to education & prof. trainings promoted 2. Increased employment opportunities	UNDP, ILO, WB		
		Technical and Vocational Training	Train youth for employment and promote peacebuilding	UNESCO, UNICEF		
		Life skills and Peace Building Education and Conflict Management	Youth trained for employment in TVET, Youth trained in Fishery, Ox ploughing, Financial Literacy, and literacy to promote engagement and livelihood, produce conflict sensitive curriculum on Life skills & Peacebuilding	UNICEF, World Bank (Private Sector Development Project)		Greater Equatoria, WBG, NBG, Lakes

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Chapter 10: Recommendations

This report provides evidence-based grounds to guide the government and multi-agency resilience efforts in South Sudan. The RCA intends to help the development of a comprehensive results framework to support long-term and sustainable development based on existing policies and programmes. This framework shall converge on a clear set of outcomes and outputs matching the resilience-relevant absorptive, adaptive and transformative capacities to be strengthened at individual, household and community level.

ROLES OF THE COORDINATION MECHANISMS ON RESILIENCE IN SOUTH SUDAN

- **At the country level:**
  - Facilitate a fruitful dialogue among stakeholders and enhance the resilience agenda vis-à-vis the government and donors;
  - Coordinate the design and implementation of resilience programming in a harmonised, efficient and effective way that ensures adequate multi-sectoral and geographical coverage; and
  - Ensure that the indicators of capacities identified as distinguishing resilient and non-resilient households are integrated and systematically monitored within existing multi-sectoral surveys
- **At the state level:**
  - Ensure an effective and efficient coordination of ongoing programmes in different sectors through converging platforms or mechanisms;
  - Leverage ongoing interventions to build systems for safety nets and social protection over the medium and long-term;
  - Ensure sectoral and geographical coverage of resilience programmes; and
  - Set priority areas (both sectoral and geographical) for specific resilience initiatives

The RCA stands as an opportunity for rolling out a holistic multi-agency approach to resilience. A fruitful dynamic of partnership has already started to bear fruits in terms of joint policy and programmes planning on resilience in South Sudan. The partnership dynamic mirrors the urge to shape policies at a two-tier level including country and state levels.

This requires the existence of a strong coordination mechanism with the following objectives and mandate at national and state levels.

The RCA findings provide grounds for the formulation of a 'dual track' resilience agenda that caters to immediate humanitarian needs while balancing this with a longer-term development approach to reducing vulnerabilities and strengthening capacities including livelihoods support, social services and social protection. The evidence-based depiction of capacities can provide programming impetus for both humanitarian and development agencies seeking to strengthen resilience to the many shocks and stressors affecting South Sudan.

During the consultations held around the RCA in Juba, it was agreed that this analysis would add to the efforts of the government of South Sudan in building the resilience of the country as part of Vision 2040 and the implementation of the 2016-17 United Nations Interim Cooperation

Framework (ICF). Given the breadth of resilience approaches and capacities essential to strengthening resilience in South Sudan, and the depth of needs and vulnerabilities across all states, prioritisation and sequencing is essential. Alongside agreement on the capacities identified, the following priorities were agreed upon:

- **Governments' ownership of the process is crucial to ensure effectiveness and sustainability of resilience building.** The role of governments in coordinating efforts at national level is key, and several crucial policies can support this. These include the National Social Protection Policy Framework, the Comprehensive Agricultural Master Plan (CAMP), the Disaster Risk Management Policy and the Youth Policy.

- **This analysis has proved the fundamental role of building upon interagency synergies.** Resilience building can only be achieved through the active engagement of all stakeholders through a comprehensive and inclusive process. This needs to be sustained over the long-term and beyond the analysis - for high-impact resilience investments across levels, key sectors include agriculture, food security and nutrition, infrastructure, and basic social services (health, education, WASH and social protection).

- **Partnerships are key in the resilience agenda**, enabling vital changes not just in '*what*' is implemented but also '*how*' it is implemented. Improvements can be made to coordination and alignment, both at national and state level, particularly in the following:
  - Information sharing;
  - Joint assessments and analysis;
  - Increased convergence of activities through joint planning and programming;
  - Multi-sector coordination mechanisms geared towards building sustainable systems;
  - Synergies across interventions supported by resilience focal points or working groups;
  - Mutual accountability; and
  - Aligned resource mobilisation and funding.

- **The learning agenda on resilience building in South Sudan remains essential to be maintained and nurtured.** This also includes for instance agreement on monitoring of resilience-related indicators and to do so with a core but flexible set of indicators that are derived as much as possible from existing monitoring systems. This can be achieved through national efforts, as well through linkages with international initiatives, such as the Food Security Information Network (FSIN).

Building on these principles, all actors within the RCA country team committed to build a multi-agency *Common Action Plan* based on and supporting existing government policies. This plan will streamline joint interventions aimed at strengthening resilience-relevant capacities in key sectors while defining clear roles and mandates of each actor, a calendar and geographical scope of interventions. The Common Action Plan shall mirror the key findings of the RCA to transform vulnerability into resilience for at-risk households, and to strengthen capacities for households already on resilience pathway.

In the meantime based on the analysis and the working relationships established through it, the RCA is already used as a technical platform for multi-agency, multi-sectoral and multi-dimensional planning on resilience in South Sudan.

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Annexes

ANNEX 1: LIVELIHOODS ZONES DESCRIPTION

SS01: Equatorial maize and cassava (Greenbelt Zone)

This is the only zone with bimodal rainfall pattern and two reliable seasons. It is a traditional surplus-producing agricultural region, also known as the 'breadbasket' of southern Sudan. Unlike other zones, rainfall is usually not a limitation. Households in the wetter southwestern areas of the Equatorial maize and cassava Zone rely almost exclusively on agriculture to meet their food needs. The potential for households to increase their cash income is higher than all the other zones because they tend to be food secure. Surplus production is common and households cope with dry years by increasing their dependence on root crops and exchange. Reliable rainfall and two consistent growing season's guarantees sufficient access to food.

SS02: Iron stone plateau agro-pastoralist zone

This livelihood zone is concentrated within the great Iron Stone plateau. The main livelihoods are agriculture, hunting and gathering. Households are heavily dependent on crop production, but they are also able to access surpluses in the neighboring Greenbelt. The main food sources in this zone are crop cultivation, wild plant and honey collection, and game hunting. Shifting cultivation is practiced so as to maintain soil fertility. Despite the zone's high agricultural potential, drought often affects local crop yields. Thus, the zone has a high risk to be food insecure during years of crisis.

SS03: Highland forest and sorghum

The zone has a unimodal rainfall season from April to November and a short dry season from December to March. Agriculture and pastoralism are equally employed. Reliable rainfall and fertile soils favor rain-fed crop farming and livelihood dependent on sedentary cultivation with less reliance on livestock. Households in this zone depend upon a wide variety of crops, typically cultivated twice each year. A significant amount of cassava is grown, ensuring relative resistance to drought. Relatively food secure areas of Greater Equatoria region and Jonglei state increasingly rely on cattle, trade and root crops in difficult years.

SS04: Western groundnuts, sesame and sorghum

The zone has a unimodal rainfall which starts in April to October, and the dry season from November to March. Livelihoods in this zone are chiefly based on agriculture, supplemented by seasonal fishing in shallow rivers using spears and traps and livestock products. It is a highly productive crop farming zone.

SS05: Eastern semi-arid pastoral Zone

This zone has a unimodal rainfall pattern which lasts from around May to November and the dry season from December to April. This is the driest of all the zones, and here drought is the norm. Households are mostly nomadic pastoralists who depend on livestock for grain

exchange, livestock products and wild foods. In this zone, households practice nearly pure form of pastoralism and there is almost exclusive reliance on livestock and livestock trade for food. Seasonal migration takes place to search for water and pasture. This provides opportunities for substantial trade and exchange with neighboring communities. However, cattle raiding and poor relations with neighboring communities often disrupt this critical access. Some households attempt to grow sorghum, with poor results.

SS06: Eastern plains sorghum and cattle (Eastern Flood Plains)

The area has a unimodal rainfall pattern starting from May to November and the dry season from December to April. The economy is agro-pastoral. Crop farming and livestock rearing are both important sources of livelihood. However, frequent floods and other hazards make crop cultivation a precarious activity. Thus, households cultivate less and move longer distances for grazing, water, fishing, exchange and also wild game. Current challenges include recurrent inter- and intra-tribal hostilities, lack of cohesive local political leadership, and poor infrastructure for facilitating access to food and non-food needs. Relatively at less risk, seasonal food insecurity mainly due to recurring floods.

SS07: Greater Bahr el Ghazal sorghum and cattle

The zone has a unimodal rainfall pattern from May to October, with a dry period from November to April. Households in this zone generally depend on livestock, crops, wild foods and fish as their main food sources. Seasonal migration of households to Sudan for labour and petty trade is significant in this zone, together with larger numbers of livestock and exchange. Recurrent floods and droughts, compounded by conflicts, have pushed households to increasingly rely on fish and wild foods.

SS08: Nile basin fishing and agro-pastoral (Nile and Sobat Rivers Zone)

This zone is prone to seasonal annual flooding (July-December) from the Nile and Sobat rivers, which increases yields of fish and wild plants. Although river fishing in this zone takes place throughout the year, it is less important during the period of peak seasonal rainfall and flooding (June to September). During this period fishing activity is concentrated in the flood plains and swamps.

SS09: Oil resources, maize and cattle

This zone has a unimodal rainfall season that starts in May and ends in October. It has surplus maize production, sold in external markets. The main hazards include reduced crop and livestock production from flood, drought, bird attack, plant and animal diseases (particularly when livestock are confined due to delayed receding of flood waters), conflict and livestock raiding and low livestock and high food prices.

SS10: North eastern maize and cattle

The zone has a unimodal rainfall lasting from May-October and a dry season lasting from November to April. This is an agro-pastoral area, with a majority of households practicing agriculture, livestock and fishing. Livelihood patterns in this area are largely determined by the annual distribution of rainfall and water courses, including the River Sobat and tributaries running from Ethiopia into the country. In years of poor rainfall, the poor group maximizes their access to food, through increased wild food collection, migratory labor and the sale of some

goats and sheep. The major hazards are from floods, drought, and bird and pest damage to crops and inter communal conflict.

SS11: Northern sorghum and livestock

The rainfall pattern is unimodal with two agricultural seasons a rainy season, from May to October and a dry season from November to April. The inhabitants of this zone are agro-pastoralists with mainly rain fed food crops grown. The seasonal movements are the source of frequent conflict over pastures, waters and cattle raiding. Floods and crop pests and diseases normally compound the problem of low crop harvests in this zone and increasing reliance particularly by the poor group on the market for food.

ANNEX 2: DEFINITIONS OF RESILIENCE CAPACITIES

Working definitions of the three key resilience capacities used in this analysis (section XX) are as follows:

- **Absorptive capacity** is the ability to minimize exposure to shocks and stresses where possible and to recover quickly when exposed without suffering permanent, negative impacts on their longer-term wellbeing. It is being able to cope. This is the resilience capacity operating in the shortest term frame, typically at individual or household level.
- **Adaptive capacity** involves making informed choices to adapt to changing social, economic and environmental conditions. This might involve responses that support preparedness, flexibility and adaptation, particularly in terms of livelihood strategies, assets and social and human capital. They are proactive responses. Typically the indicators of adaptive capacity operate in a medium term time frame, and at household and/or community levels.
- **Transformative capacity** typically relates to governance mechanisms, policies/regulations, infrastructure, community networks, and formal safety nets that are part of the wider system in which households and communities are embedded. It is longer term and structural. Transformative capacity refers to (often significant) changes that enable more lasting resilience, at community and systems (or 'enabling environment) levels.

These definitions are adapted from others including those of Frankenberger and Costas, 2014, Frankenberger et al., 2012, and Béné et al., 2012

ANNEX 3: RESILIENCE PRINCIPLES

The following principles inform RCA:

1. ***Resilience needs to be measured in relation to a given outcome.*** RCA focuses on resilience to one or more wellbeing outcome, which should be sustained and improved over time and shocks. Food security and nutrition are commonly the wellbeing outcomes used, as they align with the interests of a broad range of agencies and are relatively well represented in available data. Other wellbeing outcomes could be used based on the context, objectives and data availability.

2. ***Resilience needs to be related to shocks and stresses.*** Within a given context, RCA starts by generating trend analyses of typical shocks such as drought or dry season, floods and insecurity. A calendar showing trends in these shocks over time can be generated, and correlated with trends in outcomes and capacities. Identified shocks can be understood alongside a review of common stresses which increase vulnerability to (and impact of) these shocks.

3. ***Resilience can be understood as a set of capacities: absorptive, adaptive and transformative.*** Trends in outcome indicators (e.g. food security and nutrition) can be used to distinguish resilient households from non-resilient ones. By matching this against a broad range of corresponding quantitative and qualitative data, it is possible to see which indicators are significant to resilience. Certain indicators may be seen to matter more than others in terms of supporting household capacity to absorb a shock, or adapt and transform in the face of it. This is the basis for an analysis that can guide programming and policy to strengthen resilience. Where gaps exist in data for understanding resilience-relevant capacities, RCA identifies them and makes recommendations for addressing them.

4. ***Resilience can be measured at different levels, including individual, household, community, systems, sub-national, national and regional levels.*** RCA might focus on understanding resilience at household level, while referencing higher-level factors that influence this, i.e. community or higher levels. Analysis can be aggregated for districts, areas, or regions.

5. ***Resilience is best understood through integration of qualitative and quantitative methods, considering objective and subjective measures.*** Quantitative data is gathered from available sources (surveys, assessments, evaluations etc.) while complementary qualitative data is taken from literature and also from consultations with communities and other relevant stakeholders in the analysis context.

6. ***Resilience must be understood over a significant time frame, with longitudinal data revealing how risks, responses and resilience interact – and affect food security and nutrition – over time and over shocks.*** RCA looks at relevant and available data from recent years for which relevant data is available. A longer time frame may be referenced where necessary, for example to show long term trends in livelihoods, assets, security etc. Looking forward, RCA hopes to guide ongoing resilience analysis in the same context using datasets from continued or additional surveys.

7. ***A resilience analysis useful to implementing agencies must reference current programmes and policy, in order to guide suggestions on where improvements could be made.*** RCA includes an analysis of relevant programmes and policies in the analysis context. It also identifies policies or programmes, ongoing or planned, which could be informed by its analysis of which capacities strengthen resilience.

ANNEX 4: DROUGHT METHODOLOGY

When national level data on drought occurrences is not available the "**Number of Poor Growing Seasons (NPGS)**" can be used as a proxy to measure recent exposure to drought. This is done using remote-sensed datasets on the Normalized Difference Vegetation Index (NDVI) or Rainfall Estimates data (RFE) (depending on context).

The analysis. Preparation and analysis of NDVI data in particular is complex. In essence, multiple raster files that capture NDVI values at specific intervals in time over a number of years are downloaded and filtered for atmospheric interference and other factors that can influence final readings. Once done:

A **long-term (NDVI) average** of vegetation cover for each growing season is calculated (there may be more than one growing season in a given location).

The NDVI values for the growing seasons of each of the most recent 5 five years is compared against the long-term average.

This comparison is expressed as the *number of poor growing seasons (NPGS)* if the more recent values fall below the long-term average.

The basic assumption behind this comparison is that if the vegetation growth in a particular growing season is considerably below the longer-term average this would indicate **water stress** or **drought conditions** for vegetation growth in that area.

The results of the above are presented in raster format, where each pixel captures the number of times in the last five years that the NDVI values of the growing seasons were below the long-term average. From this, figures are aggregated to yield an average number of poor growing seasons by district. The range of values for the NPGS is broken down into three classes (**low, medium** and **high**) and mapped.

When RFE, NDVI and/or WRSI data are available, these can be cross-tabbed to yield a merged classification that reflects the impacts of all.

ANNEX 5: RESILIENCE MATRIX DATA

		Round 2 - October 2010			round 4- June 2011			round 5 - October 2011			Round 7 - June 2012			Round 8 - October 2012			Round 10 - June 2013			Round 11 - October 2013			Round 13 - June 2014			Round 14 - October 2014		
		n	mean or %	sign <0.05	n	mean or %	sign <0.05	n	mean or %	sign <0.05	n	mean or %	sign <0.05	n	mean or %	sign <0.05	n	mean or %	sign <0.05	n	mean or %	sign <0.05	n	mean or %	sign <0.05	n	mean or %	sign <0.05
T-TEST																												
livelihood diversification (number or livelihood activities 0-3)	resilient	195	2.32	0.447	631	2.57	0.000	413	2.50	0.000	272	2.50	0.000	494	2.29	0.060	556	2.48	0.000	843	2.43	0.000	590	2.13	0.355	888	2.09	0.587
	non-resilient	546	2.27		777	2.26		717	2.05		993	2.18		802	2.21		687	2.06		796	2.19		1505	2.16		2001	2.08	
livestock diversification (number of different animals owned 0-5)	resilient	-	-	-	631	1.43	0.000	413	1.42	0.001	272	1.48	0.003	494	1.26	0.003	556	1.59	0.005	843	1.33	0.000	590	1.99	0.000	888	1.41	0.014
	non-resilient	-	-	-	777	1.00		717	1.17		993	1.24		802	1.05		687	1.38		796	1.19		1505	1.67		2001	1.28	
crop diversification (number of different crops cultivated 0-5)	resilient	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		843	3.78	0.000	590	1.97	0.058	888	1.66	0.929
	non-resilient	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		796	3.17		1505	1.87		2001	1.67	
Coping Strategy Index	resilient	61	28.71	0.158	352	33.17	0.000	181	26.40	0.000	154	32.64	0.000	154	21.56	0.330	269	22.91	0.001	843	6.10	0.000	590	6.00	0.000	888	5.75	0.031
	non-resilient	199	25.07		537	43.51		397	33.79		742	30.91		309	20.13		405	28.06		796	8.63		1505	8.60		2001	6.59	
total household monthly expenditure	resilient	195	389.82	0.000	631	524.94	0.000	413	592.46	0.000	272	951.08	0.000	494	570.32	0.002	556	750.17	0.000	843	577.37	0.000	590	645.41	0.000	888	573.58	0.094
	non-resilient	546	292.47		777	321.51		717	464.40		993	614.28		802	465.28		687	520.03		796	401.07		1505	539.41		2001	505.82	
share of food expenditure	resilient	195	0.41	0.000	631	0.45	0.000	413	0.41	0.000	272	0.44	0.000	494	0.38		556	0.46	0.000	843	0.42	0.000	590	74.43	0.180	878	39.99	0.700
	non-resilient	546	0.51		777	0.63		717	0.62		993	0.63		802	0.54		687	0.62		796	0.63		1497	71.80		1954	40.42	
household size	resilient	190	7.58	0.621	626	7.42	0.022	413	8.28	0.007	271	7.86	0.051	490	7.33	0.001	555	7.57	0.036	843	6.94	0.299	576	7.05	0.220	888	7.04	0.000
	non-resilient	530	7.71		762	7.00		717	7.67		985	7.47		796	6.78		685	7.24		796	6.81		1466	7.31		2001	7.65	
Livelihood activities (% of total livelihood)																												
Agriculture and crop sales	resilient	195	23.15	0.070	627	25.97	0.000	412	26.13	0.020	269	21.96	0.000	489	24.81	0.066	554	20.92	0.000	823	23.84	0.000	587	28.32	0.000	888	45.11	0.369
	non-resilient	542	18.71		776	12.96		710	21.38		991	12.22		795	21.32		687	10.12		783	16.28		1484	27.80		2001	46.47	
Livestock and livestock sales	resilient	195	13.53	0.990	628	15.35	0.000	413	15.78	0.006	272	15.91	0.226	493	13.14	0.036	553	16.98	0.218	823	12.01	0.688	587	24.15	0.000	888	10.93	0.105
	non-resilient	544	13.56		777	7.70		716	11.32		992	13.61		798	10.09		684	14.93		784	11.50		1484	18.60		2001	9.41	
Casual labour	resilient	195	14.84	0.803	630	9.35	0.033	413	7.78	0.105	271	11.41	0.233	491	11.27	0.265	552	11.87	0.070	823	13.81	0.465	587	8.87	0.005	888	3.67	0.005
	non-resilient	544	14.28		775	12.04		713	10.01		987	13.60		802	9.77		687	14.50		783	14.78		1484	12.07		2001	5.54	
Skilled/salaried labour	resilient	195	8.50	0.680	630	9.34	0.017	412	13.86	0.011	271	16.93	0.000	492	11.04	0.819	556	15.13	0.054	823	12.63	0.168	587	12.81	0.119	888	11.20	0.002
	non-resilient	544	7.75		776	6.49		716	9.70		992	9.62		799	10.70		687	12.09		784	10.83		1484	10.91		2001	8.36	
Sale of natural resources	resilient	195	17.73	0.395	630	16.56	0.000	413	12.79	0.000	272	14.15	0.000	494	13.61		552	13.30	0.000	823	15.30	0.000	587	4.40	0.001	888	10.32	0.422
	non-resilient	544	19.92		774	32.74		713	22.56		988	26.98		800	24.49		684	23.72		783	28.19		1484	7.06		2001	11.79	
poor Income Susstainability and resilability	resilient	195	21.69	0.105	630	20.47	0.000	413	16.36	0.000	272	15.62	0.000	494	15.80		549	14.55	0.000	823	15.97	0.000	587	6.85	0.005	888	11.53	0.068
	non-resilient	543	26.11		774	38.67		711	29.38		987	29.41		800	28.15		683	27.74		782	29.46		1484	9.61		2001	13.39	
non-sustainable resources	resilient	195	2.10	0.044	631	2.05	0.110	413	1.38	0.120	272	1.03	0.127	494	1.37	0.069	556	0.90	0.012	823	1.33	0.212	587	1.16	0.717	888	1.54	0.937
	non-resilient	546	4.41		777	3.19		717	2.48		993	2.01		802	2.57		686	2.18		784	1.92		1484	1.01		2001	1.57	
CHI-SQUARE																												
disable in the households	resilient	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.84	0.002	156	0.20	0.770
	non-resilient	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.78		436	0.21	
female house hold head	resilient	77	0.39	0.124	211	0.35	0.001	103	0.29	0.048	83	0.32	0.377	100	0.21	0.091	65	0.12	.045*	169	0.20	0.165	117	0.20	0.159	649	0.84	0.128
	non-resilient	249	0.46		317	0.44		232	0.35		323	0.35		195	0.25		107	0.16		182	0.23		341	0.23		1818	0.86	
own livestock	resilient	112	0.58	0.259	442	0.70	0.000	281	0.69	0.019	213	0.79	0.000	355	0.75	0.002	423	0.78	0.000	-	-	-	-	-	-	472	0.61	0.558
	non-resilient	289	0.53		414	0.54		441	0.62		650	0.66		518	0.66		448	0.67		-	-	-	-	-	-	1262	0.60	

ANNEX 6: AGRICULTURE STATISTICS: AREA CULTIVATED, PRODUCTION AND SURPLUS/DEFICIT (CFSAM 2015)

State/County	Cereal area 2014 (ha)	Average Area (ha/hhd)	2014 gross yield (t/ha)	2014 gross cereal production (t)	2014 net cereal production (t)	Population mid-2015	2015 cereal req't (t)	2015 surplus/ deficit (t)
Central Equatoria	**198 926**	**1.27**	**1.4**	**278 586**	**222 869**	**1 554 446**	**197 673**	**25 196**
Juba	37 373	1	1.1	41 110	32 888	490 626	68 688	-35 800
Kajo Keji	55 723	1.6	1.5	83 585	66 868	270 564	32 468	34 400
Lainya	21 508	1.3	1.5	32 262	25 810	145 120	17 414	8 395
Morobo	25 099	1.6	1.6	40 158	32 126	193 749	23 250	8 877
Terekeka	18 409	0.7	1.1	20 250	16 200	189 427	22 732	-6 532
Yei River	40 814	1.6	1.5	61 221	48 977	264 960	33 120	15 856
Eastern Equatoria	**150 962**	**1.09**	**1.18**	**177 682**	**142 146**	**1 094 791**	**135 808**	**6 338**
Budi	22 066	1.3	1.2	26 480	21 184	112 392	13 487	7 697
Ikotos	23 295	1.1	1.2	27 953	22 363	131 479	16 435	5 928
Kapoeta East	17 431	1	0.8	13 945	11 156	185 205	23 151	-11 995
Kapoeta North	9 630	1	0.8	7 704	6 163	114 304	14 288	-8 125
Kapoeta South	7 419	1	0.8	5 935	4 748	91 520	11 897	-7 149
Lafon	14 717	0.9	1	14 717	11 774	122 321	14 679	-2 905
Magwi	38 119	1.4	1.5	57 178	45 742	201 413	24 169	21 573
Torit	18 285	0.8	1.3	23 770	19 016	136 157	17 701	1 316
Jonglei	**31 268**	**0.64**	**0.92**	**28 885**	**23 108**	**1 545 664**	**172 846**	**-149 738**
Akobo	3 949	0.5	0.7	2 765	2 212	156 413	17 206	-14 994
Ayod	938	0.5	0.7	656	525	159 348	17 528	-17 003
Bor South	2 208	0.8	0.9	1 987	1 589	200 429	23 049	-21 460
Duk	0	0	0	0	0	108 086	11 889	-11 889
Fangak	2 586	0.7	0.7	1 811	1 448	95 877	10 546	-9 098
Khorflus/Pigi/cnl	2 157	0.7	0.7	1 510	1 208	175 235	19 276	-18 068
Nyirol	3 795	0.5	0.8	3 036	2 429	139 106	15 302	-12 873
Pibor	6 050	0.7	1.3	7 866	6 292	116 253	13 950	-7 658
Pochalla	5 007	0.7	1.3	6 509	5 207	65 765	7 892	-2 685
Twic East	1 389	0.7	0.6	833	667	121 319	13 345	-12 679
Uror	3 188	0.7	0.6	1 913	1 530	207 834	22 862	-21 331
Lakes	**93 477**	**0.89**	**1.23**	**114 892**	**91 914**	**1 115 677**	**122 726**	**-30 812**
Awerial	5 846	1	0.9	5 262	4 209	108 193	11 901	-7 692
Cueibet	17 883	0.8	1.2	21 460	17 168	178 266	19 609	-2 441
Rumbek Centre	14 925	0.8	1.4	20 895	16 716	237 099	26 082	-9 366
Rumbek East	14 008	0.8	1.4	19 611	15 689	187 887	20 668	-4 979
Rumbek North	4 002	1.00	1.4	5 602	4 482	50 177	5 519	-1 038
Wulu	8 230	1.00	1.2	9 876	7 901	70 331	7 736	165
Yirol East	10 567	1.00	1	10 567	8 454	125 793	13 838	-5 384
Yirol West	18 016	1.00	1.2	21 619	17 296	157 932	17 373	-78
N Bahr el Ghazal	**127 730**	**0.77**	**1.1**	**140 608**	**112 486**	**1 370 920**	**150 801**	**-38 315**
Aweil Centre	5 958	0.6	1.2	7 150	5 720	107 073	11 778	-6 058
Aweil East	55 093	0.8	1	55 093	44 075	536 825	59 050	-14 976
Aweil North	25 346	0.75	1.1	27 881	22 305	273 593	30 095	-7 790
Aweil South	11 836	0.7	1.2	14 203	11 362	147 535	16 229	-4 867
Aweil West	29 497	0.8	1.23	36 281	29 025	305 895	33 648	- 4 624

State/County	Cereal area 2014 (ha)	Average Area (ha/hhd)	2014 gross yield (t/ha)	2014 gross cereal production (t)	2014 net cereal production (t)	Population mid-2015	2015 cereal req't (t)	2015 surplus/ deficit (t)
Unity	**14 786**	**0.42**	**0.7**	**10 320**	**8 256**	**1 018 080**	**88 554**	**-80 298**
Abiemnhom	470	0.42	0.4	188	150	18 085	1 537	-1 386
Guit	0	0	0	0	-	31 877	2 709	-2 709
Koch	2 675	0.42	1	2 675	2 140	137 178	11 660	-9 520
Leer	2 328	0.42	0.6	1 397	1 117	143 255	12 178	-11 061
Mayendit	2 644	0.42	0.6	1 586	1 269	87 962	7 477	-6 208
Mayom	0	0	0	0	-	161 099	13 693	-13 693
Panyijar	3 058	0.42	0.4	1 223	978	97 422	8 281	-7 303
Pariang	3 612	0.42	0.9	3 251	2 601	139 626	11 868	-9 268
Rubkona	0	0	0	0	-	201 576	19 150	-19 150
Upper Nile	**36 040**	**1.09**	**0.67**	**24 091**	**19 273**	**1 127 551**	**98 215**	**-78 942**
Baliet	300	0.6	0.8	240	192	22 717	1 931	-1 739
Fashoda	991	0.5	0.8	793	634	39 499	3 357	-2 723
Longochuk	675	0.5	0.6	405	324	70 781	6 016	-5 692
Luakpiny/Nasir	3 031	0.6	0.6	1 819	1 455	250 943	21 33	-19 875
Maban	3 461	0.5	0.6	2 076	1 661	54 687	4 648	-2 987
Maiwut	982	0.5	0.6	589	472	102 324	8 698	-8 226
Malakal	0	0	0	0		148 329	14 091	-14 091
Manyo	0	0	0	0		46 818	3 980	-3 980
Melut	5 522	1.7	1	5 522	4 418	77 265	6 568	-2 150
Panyikang	0	0	0	0	-	24 180	2 055	-2 055
Renk	19 751	2	0.6	11 851	9 480	177 995	16 020	-6 539
Ulang	1 326	0.6	0.6	796	636	112 014	9 521	-8 885
W Bahr el Ghazal	**69 015**	**0.98**	**1.37**	**94 243**	**75 395**	**523 373**	**59 351**	**16 044**
Jur River	23 775	1	1.3	30 908	24 726	200 864	22 096	2 631
Raga	11 056	0.9	1.4	15 479	12 383	84 272	8 427	3 956
Wau	34 183	1	1.4	47 857	38 285	240 236	28 828	9 457
Warrap	**124 301**	**0.85**	**1.24**	**153 686**	**122 949**	**1 322 166**	**127 856**	**-4 907**
Abyei	2 256	0.6	1.3	2 932	2 346	64 829	5 834	-3 488
Gogrial East	10 758		1	10 758	8 606	135 823	12 903	-4 297
Gogrial West	41 781	0.9	1.4	58 493	46 794	324 070	34 028	12 767
Tonj East	10 784	0.8	1	10 784	8 627	125 586	12 558	-3 931
Tonj North	18 736	0.8	1	18 736	14 989	206 539	20 653	-5 664
Tonj South	13 654	0.9	1.3	17 750	14 200	103 395	9 305	4 895
Twic	26 333	0.9	1.3	34 233	27 386	361 925	32 574	-5 187
Western Equatoria	**167 340**	**1.39**	**1.47**	**245 957**	**196 765**	**758 607**	**109 998**	**86 767**
Ezo	28 332	1.4	1.6	45 331	36 265	102 892	14 919	21 345
Ibba	14 264	1.4	1.4	19 969	15 975	46 594	6 756	9 219
Maridi	20 852	1.5	1.5	31 278	25 022	100 006	14 501	10 521
Mundri East	6 891	1.2	1.25	8 613	6 891	55 864	8 100	-1 210
Mundri West	7 050	1.5	1.7	11 985	9 588	51 060	7 404	2 185
Mvolo	5 846	1.1	1	5 846	4 676	57 384	8 321	-3 644
Nagero	2 311	1.1	1	2 311	1 849	11 304	1 639	210
Nzara	23 329	1.4	1.5	34 993	27 994	73 522	10 661	17 334
Tambura	20 696	1.4	1.4	28 975	23 180	70 344	10 200	12 980
Yambio	37 770	1.4	1.5	56 656	45 324	189 635	27 497	17 827
SOUTH SUDAN	**1 013 845**	**0.99**	**1.25**	**1 268 951**	**1 015 161**	**11 433 274**	**1 263 826**	**-248 666**

ANNEX 7: MASTER LIST OF COPING STRATEGIES

Food-based coping strategies	Description
a) Rely on less preferred and less expensive foods	Household makes changes to types of foods consumed in order to manage the shortfall of food. This question is concerned with the types of foods consumed rather than the quantities consumed.
b) Borrow food from a friend or relative	Household increases the short-term food availability by relying on help from friends or relatives in the form of food or money to buy food.
c) Reduce number of meals eaten in a day	A rationing strategy in which most household members consume fewer meals in the day to manage the shortfall of food.
d) Reduce portion size of meals	A rationing strategy in which the amount of food eaten at meals is reduced in order to manage the shortfall of food.
e) Reduce the quantities eaten by the (adults/mothers of young children)	A rationing strategy in which the food consumption of adults is restricted so that small children will have enough to eat. In households without children, the answer should be zero.
f) Skip entire days without eating	A severe rationing strategy in which the household members are not able to find anything to eat over the space of at least one full day during the last week.
g) Collect any unusual amounts of types of wild foods for the season	Household increase their consumption of wild foods as compared to the average for the season
Livelihood coping strategies	**Description**
h) Sold household assets/goods (radio, furniture, refrigerator, television, jewellery, clothes etc.)	Selling off household assets is equivalent to spending down savings – a sign of stress, or mild food insecurity
i) Purchased food on credit or borrowed food	Incurring more debt to meet food needs or spending down savings are signs of stress, or mild food insecurity.
j) Spent savings	Incurring more debt to meet food needs or spending down savings are signs of stress, or mild food insecurity
k) Borrowed money	Incurring more debt to meet food needs or spending down savings are signs of stress, or mild food insecurity.
l) Sold more animals than usual	Items indicating reduced ability to deal with future shocks due to current reduction in resources or increase in debts
m) Sold productive assets or means of transport	Selling off productive assets is a crisis strategy, or moderate food insecurity.
n) Consumed seed stocks that were to be held/saved for the next season	This action decreases productive assets, affecting next year's harvest, which is a crisis strategy.
o) Reduced expenses on health (including drugs) and education	This decreases human capital, a productive asset, so is considered a crisis strategy, or moderate food insecurity.

p) Withdrew children from school	This decreases human capital, a productive asset, so is considered a crisis strategy, or moderate food insecurity.
q) Sold house or land	Items that affect future productivity and are more difficult to reverse, or more dramatic in nature
r) Begged	Items that affect future productivity and are more difficult to reverse, or more dramatic in nature, includes loss of human dignity
s) Sold last female animals	Specific to livestock producers; Items that affect future productivity, and are more difficult to reverse
t) Entire household migrated	Items that affect future productivity, but are more difficult to reverse, or more dramatic in nature