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## Assessment of Agricultural Development for the Office of Economic Growth, USAID/South Sudan

**July 2015**

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# ASSESSMENT OF AGRICULTURAL DEVELOPMENT FOR THE OFFICE OF ECONOMIC GROWTH, USAID/SOUTH SUDAN

OPTIONS FOR USAID SUPPORT FOR AGRICULTURAL  
DEVELOPMENT IN A NEW NATION IN CRISIS

July, 2015

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# ACRONYMS

ABS	Agricultural Bank of Sudan
ABSS	Agricultural Bank of South Sudan
AfDB	African Development Bank
AGRA	Alliance for Green Revolution in Africa
APS	Annual Program Statement
ASIP	Agriculture Sector Investment Plan
ASPF	Agriculture Sector Policy Framework;
CAMP	Comprehensive Agriculture Master Plan
CIDA	Canadian International Development Agency
CMDRR	Community Managed Disaster Risk Reduction
COP	Chief of Party
CPA	Comprehensive Peace Agreement
DFID	Department for International Development
DRR	Disaster Risk Reduction
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FARM	Food, Agribusiness and Rural Markets
FBO	Farm-Based Organization
FFP	Food for Peace, U.S. Agency for International Development
GBG	Greater Bahr el Ghazal
GDP	Gross Domestic Product
GiZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German aid agency)
GOSS	Government of Republic of South Sudan
IDPs	Internal Displaced Persons
INGOs	International non-governmental organizations
IP,	Investment Plan
IPC	South Sudan Integrated Food Security Phase Classification
JFSP	Jonglei Food Security Project (USAID)
JICA	Japan International Cooperation Agency

JPC	Joint Policy Cells (USAID)
MAF	Ministry of Agriculture and Forestry,
MAFCRD	Ministry of Agriculture, Forestry, Cooperatives and Rural Development;
MESP	Monitoring and Evaluation Support Program (USAID/MSI)
MSI	Management System International
NBG	Northern Bahr el Ghazal
NGOs	National Non-governmental organizations
NRECA	National Rural Electric Cooperative Association
NTD	Neglected Tropical Diseases
ODA	Overseas Development Assistance
P4P	Purchase for Progress (World Food Program)
SNV	Netherlands Development Organization
SOW	Scope of Work
SSCCSE	Southern Sudan Centre for Census, Statistic and Evaluation
SSIAP	South Sudan Infrastructure Action Plan
SSP	South Sudanese Pound
TO	Transitional Objective
TPM	Team Planning Meetings
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WB	World Bank
WES	Western Equatoria
WFP	World Food Programme
WHO	World Health Organization

# EXECUTIVE SUMMARY

This Assessment examines agricultural development during a time of crisis for South Sudan. Its purpose is to provide information, lessons learned and recommendations for the USAID/South Sudan in the context of the fluid situation. The assessment took place in June 2015 and relied on an extensive document review, key informant interviews, focus group discussions and field visits.

The five research questions were:

1. What are currently the most important issues and constraints in local-level agricultural development in South Sudan at this time, their relative importance and interrelationships and major challenges and opportunities?
2. What have been major lessons learned and evaluation findings in agricultural development in South Sudan since the beginning of the conflict in December 2013?
3. What are the existing and planned major programs and investments in agricultural development by all actors, government, donors, firms, INGOs, etc. at this time?
4. What are the key resiliency issues at local levels and how can resilience be built into South Sudan's agricultural development?
5. Given USAID's security and process constraints as well as its comparative advantages and new Operational Framework, what are its best options for programming and interventions in South Sudan's agricultural development during this crisis?

Despite severe limitations due to security, the team was able to interview dozens of knowledgeable informants and actors in agriculture, and reviewed a large amount of (mostly dated) information on agriculture in South Sudan.

The following points highlight team findings and recommendations according to the five key questions guiding this assessment.

## **I. What are currently the most important issues and constraints in local-level agricultural development in South Sudan at this time, their relative importance and interrelationships and major challenges and opportunities?**

### **The current political crisis is destroying an already weak agricultural sector.**

The foremost constraint to agricultural development is the current political / ethnic conflict, which is overwhelming progress seen to date. Due to growing insecurity, local conflicts and banditry are increasing, trunk roads are more deteriorated, prices and availability of inputs increasingly volatile, government services, budgets and revenues severely limited, and new projects and investment entirely absent. Until the crisis abates, the options for realizing South Sudan's agricultural potential are limited. Meanwhile, food security has sharply decreased with an estimated 4.6 million of the 11.4 million South Sudanese needing food aid by July. Major constraints range from an inadequate and insecure trunk road network, to small and fragmented markets, to lack of farmer training, extension and input supply.

Should the crisis abate, lack of market awareness and access is the next, most critical constraint to agricultural development, followed by poor post-harvest handling, low yields, limited labor and knowledge, uncertain land tenure, lack of access to credit, and poor health and nutrition.

### **Constraints to agricultural development cross-cut other sectors**

Agricultural development in South Sudan faces considerable challenges that are directly related to the sector, but also challenges from related sectors such as health, finance, and physical infrastructure. Less than five percent of South Sudan's road network is in good condition, post-harvest losses due to lack of storage and other factors is as high as 40 percent, yields are well below the average for sub-Saharan Africa, lack of legal ownership or usufruct incentivizes land-grabbing, banks do not extend agricultural credits, and malnutrition is endemic. Incremental progress on all fronts is needed to catalyze broad-based, sustainable development in agriculture.

### **Expansion beyond Equatoria may realize relatively larger gains in strengthening food security among vulnerable groups.**

USAID should also consider diversifying its programming of development assistance northward from its current focus on Equatoria to other areas where gains in food security will be beneficial. There are many other areas of agricultural potential which need local-level organizational development for improved production and processing which are closer to conflict-affected areas where food needs and livestock use conflicts are greater, i.e. North & West Bahr el Ghazal and potentially Lakes States. While expanding agricultural programming northward may have limited impact on food security at a national level compared to deeper investments in Equatoria, such an initiative would render assistance to households and populations made vulnerable by the ongoing conflict. Current lack of transport options from areas of surplus to areas of need have already rendered Northern Bahr el Ghazal the state with lowest yields and the highest levels of projected malnutrition.

### **Investment in local agricultural development is an opportunity to invest in women.**

Women provide the bulk of agricultural labor in South Sudan and in many cases are head of their household. Building skills in agricultural practices will provide disproportionate welfare gain to women; similarly, strengthening land tenure rights will eventually strengthen women's ability to own and inherit land as South Sudan gradually transits from customary to statutory land administration. New projects or activities can expand upon FARM's successful use of female extension agents.

## **II. What have been major lessons learned and evaluation findings in agricultural development in South Sudan since the beginning of the conflict in December 2013?**

### **Given improvement across all existing constraints, agricultural development has the potential to help stabilize the country and sustainably ameliorate humanitarian need.**

Improving south-north trading linkages is a critical need to help pull surplus food grain production in the wetter, higher-yielding south and Greenbelt to the more arid and conflict-affected north. Unfortunately, this is a complex endeavor involving substantial improvements in trunk road conditions, security and taxation as well as in agricultural processing, bulking and storage. Several supply-side constraints to increasing agricultural production and products nationally also have to be addressed through local and

farm-based organizations: wider adoption of good agricultural practices, reliable provision of quality inputs, availability of land preparation and veterinary services. New USAID programming in agricultural development should also provide some support to sustain, over the long term, the achievements of the FARM project in farm-based organizations and improved practices.

**USAID should help convene and catalyze a network of government, donor, and implementing partners and lead the generation of comparative analyses, including best practices and lessons learned in agricultural development in South Sudan.**

While the assessment team found many project descriptions, reports, and plans, the database of factual evidence, analytical survey data, proven best practices and lessons-learned in agricultural development in South Sudan is meager and inadequate for objective program design. Many activities and projects have differing models of building local organizations and increasing productivity; yet, there is evidently no rigorous or comparative analysis of these models. The Government, development partners and implementers would be better able to make evidence-based plans and decisions from shared analysis and documented field experience, successes or failures of different interventions. USAID should support such an analytical effort, perhaps in association with a university or the donor-Government working groups for Agriculture Natural Resources and for Food Security (see below.)

USAID should also take an active role in the Agriculture and Natural Resources Working Group currently chaired by JICA, in the new Food Security Working Group and with key GOSS officials. Major issues for joint dialogue and action include knowledge generation and management and constraints to marketing and enterprise, i.e. licensing, taxation, trunk roads and security.

### **III. What are the existing and planned major programs and investments in agricultural development by all actors, government, donors, firms, INGOs, etc. at this time?**

**Agriculture remains a key sector for donor programming.**

While CAMP mentions 17 “development partners”, document review indicated primary support from four major donors in addition to USAID: EU, Japan, Germany, and the Netherlands. According to the JICA-supported Comprehensive Agricultural Master Plan (CAMP), a total of 29 international NGOs support food security projects, most to improve production, processing and marketing at community-levels. The World Bank is currently developing a large project loan with the MAF focused on the Equatoria region with two large components, seeds and agricultural extension, with smaller components for small-scale enterprise and a fund for innovations in agricultural development. Board approval is pending due to the crisis.

### **IV. What are the key resiliency issues at local levels and how can resilience be built into South Sudan’s agricultural development?**

**Conflict, climate, and macroeconomic instability are persistent long-term threats to household and community resiliency.**

The world’s newest nation faces the tragedy of being among its most conflict-prone, with longstanding disputes between tribes and ethnic groups within its borders, and adjacent to a parent nation that uses both conflict and economic sabotage to keep South Sudan in a state of permanent instability. Donors are

unlikely to succeed in freeing South Sudan from this predicament without a broader political settlement supported by the international community, but can at least identify and mitigate the most potent drivers of humanitarian need.

Climate change, meanwhile, is a worldwide phenomenon that has direct effect on agriculture. In semi-arid and tropical zones climate change manifests itself in more erratic rainfall, faster and heavier flooding, localized droughts and higher temperatures. Agricultural crops and livestock are highly sensitive to such weather fluctuations. This leads to economic shocks to households and communities, which has also been linked empirically to increased conflict.

### **Support to local agricultural development is support to resiliency.**

Analysis of USAID and other donor projects involving agriculture suggests a general trajectory of recovery strategies to help rural households move away from dependence on humanitarian assistance. The experience of the FARM project, the JSFP and GiZ and SNV projects as well as interviews indicate that cooperative socio-economic structures facilitate recovery from shocks. Often these community-level organizations are built upon existing traditional structures such as kinship, but regardless of origin they are typically a source of community cohesion that helps mitigate local level conflict. Anecdotal evidence suggests that these organizations enabled many households to both escape fighting in Jonglei near Bor and then return and resume livelihood activities afterwards. Disaster risk reduction activities show similar promising returns on investment by tapping into latent community capacities to weather shocks before the shock occurs. While hard data is scarce, disaster-specific research suggests that preventive activities produce significant savings in disaster response costs.

Diversification of agricultural incomes is another important source of household resiliency. Livestock and fisheries development represent key growth opportunities, as mentioned below.

### **V. Given USAID's security and process constraints as well as its comparative advantages and new Operational Framework, what are its best options for programming and interventions in South Sudan's agricultural development during this crisis?**

**New USAID programming in agricultural development should emphasize building capacity, food security and resilience at the local level of households, communities (boma) and possibly payam and county.**

Based upon considerable experience including FARM and various INGO projects, building the capacity of community- and farm-based organizations in production and marketing with closer relationships among local actors increases incomes and food security, as well as resilience.

**USAID should build on and enhance the linkages between development assistance and emergency programming and evaluate results.**

Two USAID programs which are directly responding to the crisis in areas most affected by the conflict are the Jonglei Food Security Project and the new Annual Program Statement which combine development and emergency assistance. Linking new development assistance with current emergency programming can improve the effectiveness of both by increasing the responsiveness, learning and sustainability of the interventions. This would ideally be empirically demonstrated through robust evaluation. Geographic diversification northward from the Equatorias also enables USAID to more

directly improve agriculture and food security in areas closer to the humanitarian impacts of the conflict where food needs are greatest. Cooperative agreements with INGOs are also the preferred procurement in this unstable situation due to their flexibility and the ability to work more closely with beneficiary communities.

**New programming should investigate livestock and fisheries for income-generation and resiliency-building potential.**

Given the importance of livestock to most South Sudanese households – and as a potential source of conflict -- new programming should also include activities to increase livestock productivity and utility within rural communities and efforts to bridge the agrarian-pastoral divide. Fisheries also offer opportunities for local groups to organize and improve income and food security. Over 80% of fishing in South Sudan is subsistence based, but the country’s endowment of fishery resources is largely untapped and capable of supporting commercial expansion.

**Support to existing agricultural development projects should continue, with emphasis on replicating and expanding successful aspects of FARM.**

New USAID programming in agricultural development should also provide at least some support to sustain, over the long-term, the achievements of the FARM project in farm-based organizations and improved practices. Dialogue and close coordination with relevant officials and actors at the State and local levels is imperative, as well as with other major donors’ programs such as the World Bank for seeds and Equatoria and the FAO for livestock and Greater Bahr el Ghazal.

The most striking aspect in South Sudan is despite the potential of its natural resources – oil reserves, abundant land, ample water, diverse agro-ecology the stark reality is food insecurity and a wide range of difficult constraints. Notwithstanding the potential of these and other resources, agriculture is as yet severely underdeveloped largely due to decades of conflict and neglect.

This disconnect between great potential and saddening reality highlights the social factors such as resiliency and social cohesion among and between communities that constrain development. Consistent with the Collaborating, Learning, and Adapting (CLA) approach that guides the USAID/South Sudan operational framework and programming, summative assessment and research should include robust analysis and evaluation, and consider resiliency and cohesion as latent factors that are cross-cutting in their effect on programming.

# BACKGROUND

South Sudan, officially the Republic of South Sudan, is a landlocked country in northeastern Africa that gained its independence from Sudan in 2011. As a newly-sovereign nation with a largely rural, agro-pastoral population of around 12 million, South Sudan faced numerous challenges as well as special opportunities and International interest and support. The country has promising economic potential. It has petroleum and mineral reserves, abundant arable land, sizeable livestock herds, adequate rainfall and water resources and borders and river access which facilitate trade.

Despite this potential, the country is not achieving anticipated development gains due not only to past underdevelopment but also the current crisis. The conflict, which broke out between South Sudanese factions in 2013-14, has intensified in 2015. The spiraling conflict has divided the country, caused large displacement of people and herds, reduced oil production and revenues, suspended projects and investment and is leading to a growing humanitarian and macro-economic crisis.

Earlier external assessments of South Sudan's agriculture (UNDP, 2012; USAID, 2009) noted the underdevelopment of the sector, even at independence. Decades of conflict and neglect resulted in little change in subsistence practices and little investment. Not surprisingly, average grain yields are less than a ton per hectare, below all-Africa averages. Yet, South Sudan has large and unrealized agricultural potential and the realization of this potential is essential for stability and broad-based economic growth. Seventy percent of South Sudanese households work in agriculture, and about 80% of these are headed by women. Agriculture's current modest contribution to GDP will grow as agricultural production and related services increase and oil revenues decrease over time.

Nevertheless, South Sudan's agriculture remains largely pastoral; it has the highest number of livestock per capita in Africa, with three-quarters of households owning cattle. Even though 95% of its land is arable less than 4% of this area is cultivated. Over half of the land has tree cover with a substantial network of streams, rivers and wetlands and consequent fisheries. The potential for food crops in the higher rainfall areas of Equatoria and in well-watered river valleys could provide both food security and exports. Grain and livestock production increased after independence, even though investment in agriculture was modest at less than 2% of the Government of the Republic of South Sudan (GOSS) budget and 10% of total development assistance (CAMP, 2015.)

USAID support to the GOSS at independence included smallholder agricultural development through the FARM Project and roads rehabilitation (RAPID Project) to improve economic growth and opportunities as well as smaller programs in food security, land tenure and credit guarantees. USAID has worked closely with key government institutions on policies and systems to improve agricultural productivity and investment.

The current conflict is setting back agricultural development: a fifth of rural population is displaced, infrastructure and roads deteriorated, rural production cut-off from markets and rural markets from larger towns and increased herder-farmer conflict. Almost 40% of the population is now classified as food insecure (IPC/WFP, 2015.) Efforts to develop agriculture have been overwhelmed by the conflict and its widening impacts.

# PURPOSE AND QUESTIONS

This section reviews the motivating factors driving this assessment, the research questions to address, and the methodologies employed to address them.

## PURPOSE

The purpose of this Assessment is to provide USAID with information, analysis and options for South Sudan's agricultural development in the current crisis situation with view to its new Operational Framework and comparative advantages. The Assessment provides USAID/South Sudan's Economic Growth team with more information on the current situation, gaps and issues in agricultural development, as well as options for USAID programming in line with its strategic interests and comparative advantage. The Assessment is designed to assist USAID/South Sudan to reach decisions related to any modifications necessary to improve the focus for agricultural development programming in light of the current political and economic crisis.

The initial Scope of Work, (Annex I), developed and approved prior to the widening of the crisis and deterioration of the situation, referred to an "Agricultural Sector Assessment;" however, in subsequent discussions and during the team's in-briefing with USAID, the worsening crisis and severe limitations to access narrowed the focus. As agreed, the focus is local-level agricultural development primarily smallholder agricultural production, primary processing and local trading and markets at the levels of community and *payam* (including towns.) The team considered how to build resilience and basic sustainability in a fast-changing, crisis environment while enabling local agricultural economies to grow as foundations for regional and national development when stability returns in the future.

The main audience of the study report will be the USAID Mission in South Sudan, specifically the Economic Growth Team, who will use the study findings and recommendations to review USAID's investment in the agricultural sector. The partners and counterparts will be informed about current gaps in the agricultural sector that are relevant to their programming in the country. The report could be used to help government and other development partners adjust strategies and re-focus future investments in the agricultural sector. The study will also recommend relevant and effective models and approaches for USAID and its partners in the agricultural development in South Sudan.

The initial broad questions for the Assessment were refined in Team Planning Meetings with the USAID Mission Economic Growth staff, the MSI-MESP team and the Assessment Team members. The Assessment includes all the technical areas of agricultural organizations and support, resources and input supply, production, processing and storage, marketing and trade including transport, credit and investment and capacity building.

With regard to methodology, as South Sudan is a new nation, and one of the most underdeveloped countries in the world, there is dearth of analytical work and evaluations for South Sudan generally, and for agriculture specifically; moreover, the current conflict has resulted in destruction, displacement and severe limitations to access and broadening macro-impacts across the county.

## QUESTIONS

The team's framework for analysis is several, agreed-upon "big" questions modified and focused from the original SOW due to access limitations and the continuing, and even worsening crisis and the growing unmet needs for assistance to sustain lives and livelihoods.

1. What are currently the most important issues and constraints in local-level agricultural development in South Sudan at this time, their relative importance and interrelationships and major challenges and opportunities?
2. What have been major lessons learned and evaluation findings in agricultural development in South Sudan since the beginning of the conflict in December 2013?
3. What are the existing and planned major programs and investments in agricultural development by all actors, government, donors, firms, INGOs, etc. at this time?
4. What are the key resiliency issues at local levels and how can resilience be built into South Sudan's agricultural development?
5. Given USAID's security and process constraints as well as its comparative advantages and new Operational Framework, what are its best options for programming and interventions in South Sudan's agricultural development during this crisis?

In addition to the Assessment questions the team recognized and collated data to inform the Mission Learning Agenda consistent with the Collaborating, Learning, and Adapting (CLA) approach that guides the USAID/South Sudan operational framework. This is reported in Annex II.

# METHODOLOGY

The Assessment Team's methodology was threefold: research of existing government, donor and implementer documents and reports, interviews with knowledgeable key informants across a variety of organizations, and visits to selected agricultural markets and smallholder farms and discussions with farmers, traders and agribusinesses to the extent possible in six of the ten states. A particular emphasis was on how the continuing, and perhaps worsening crisis is impacting local agriculture and consequently USAID's assistance programming. The Team also referred to USAID's own deep experience and ensured a broad vetting of its findings and conclusions to provide the basis for the most objective answers possible at this time.

This methodology was, nevertheless, substantially limited due to the current crisis. First, there is a relative scarcity of recent independent analyses of agricultural situation and interventions, no doubt because of the newness of the country and its institutions and the focus in the last year and a half on emergency response. Second, security considerations severely limited access to significant areas. For instance, no travel was possible to visit farmers or pastoralists outside of Bor town and Team members nearly encountered robbers on return from a site visit.

The team, detailed in the Annex III, worked together in South Sudan for three weeks, almost half of which was outside of Juba in six states with periodic discussion with MSI and USAID. The Technical Specialists continued for an additional week of work in Juba and one other state. Another three weeks was planned in the U.S. to finalize and vet the draft report.

Data was collected by literature search and individual and team reviews of these documents, selected group discussions, key informant interviews, field visits to a variety of selected areas and situations and broad vetting of findings and conclusions. Information from the CAMP, FARM Project, the FAO and several key informants and INGOs was particularly useful.

Interviews with key, knowledgeable informants have been particularly important and include political, development and sector specialists with long experience in South Sudan such as local academics, government employees, development and relief workers, agribusiness managers, traders and farmers. Group discussions included USAID staff, contractor and grantee staffs, as well as staff of other donors, INGOs and private firms. Field observations and site visits were carefully selected with a view to logistical challenges and included a diverse range of agriculture across five of the seven delimited agro-climatological zones, although not areas have been directly impacted by the conflict.

# FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

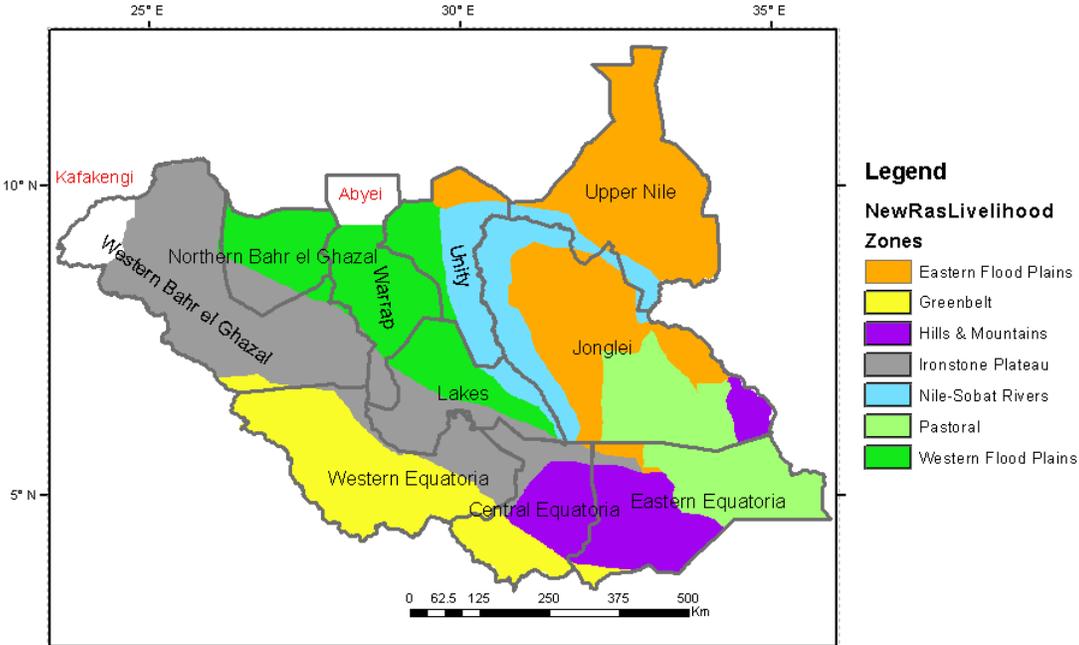
## OVERVIEW

Agricultural development in South Sudan is considered to be a driving force for economic diversification, poverty reduction and food security by the GOSS and its partner donors (GOSS, 2011; UNDP, 2012; World Bank, 2014). The country has considerable agricultural potential with a diversity of agro-climatological zones (see map), soils, vegetation and water resources.

However, there are major constraints to developing this potential. The neglect and conflicts of the decades before independence resulted in little agricultural development or investment. Agriculture has remained largely subsistence, processing and storage rudimentary, trade and markets small and fragmented, the road network seasonal and inadequate, and agribusiness and agricultural investment minimal. South Sudanese farmers had few inputs, rudimentary methods, limited access to and little understanding of markets and almost no credit.

Sorghum is the main cereal, followed by maize and millet, with an average yields ranging from 0.75 tons/ha in Bahr el Ghazal in the north to 1.5 tons/ha in Yambio in the south, generally less than African averages. Groundnuts, cassava and rice are also cultivated, primarily in the south and west. A modest variety of fruits and vegetables are also grown in small quantities.

Cultivated area in Southern Sudan has historically ranged between a minimum of one percent and a maximum of two percent of the total area (i.e. 650,000 – 1,300,000 ha). According to FAO-WFP in 2009, about 1 million hectare were put under cultivation in 2008, an increase from 2007 levels and an increase in area cultivated of about 3.8% - likely due to increasing numbers of returnees. Herd size also increased to an estimated 11.7 million cattle after independence. Freshwater fishery resources are also significant.



The internecine fighting which erupted in December 2013 and the ensuing protracted conflict have set back agricultural development and the economy as a whole. A million primarily rural inhabitants were displaced, large tracts of grazing land and well-watered valleys became inaccessible, trade routes were disrupted, national trunk roads further deteriorated and oil production and revenues declined. The already modest GORSS budget and services for agricultural development were also reduced and many programs planned by partner donors were suspended. The overall result is a stalled economy, volatility in prices and supplies, more farmer-herder conflicts and a growing national food deficit with 4.6 million people estimated to need food aid by July. Interventions to develop agriculture must now take into account a protracted conflict and the resulting division and displacement of population, emergency humanitarian needs and the national economic crisis.

The following sections discuss in more depth the specific questions of the assessment.

## **Question I. What are currently the most important issues and constraints in local-level agricultural development in South Sudan at this time, their relative importance and inter-relationships and major challenges and opportunities?**

### **Constraints**

#### **Impact of the Conflict**

South Sudan is currently “characterized by war”<sup>1</sup> in the view of a senior GOSS official, and appears to be entering a period of increasing instability. The fighting that erupted in South Sudan in December 2013 has resulted in violence, insecurity, displacement and economic disruption, which have undermined the nascent development of its underdeveloped agriculture sector. The disruption of agricultural production and markets and displacement of 1.3 million people<sup>2</sup> from their homes by the fighting and ethnic violence has resulted in a sharp decline in agricultural production, trade and incomes, and consequently food security (WB, 2015; FAO, 2015).

When the conflict broke out crop production in the states least affected, such as Greater Bahr el Ghazal and Equatoria States, were experiencing average to above average harvests which led to improved food availability in 2014. However, in areas directly affected by the conflict, planting was reduced due to insecurity and food harvests were severely limited resulting in sharp increases in food insecurity in those areas (FAO, 2015). Insecurity and conflict also adversely affected road transport north limiting the delivery of inputs and services as well as trade.

Disputes between pastoralists, settled farmers and fishermen over grazing and water sources are breaking out in many areas particularly in Greater Equatoria and Jonglei States, according to interviews in Yambio, Yei, Magwi and Bor. Conflicts over scarce resources had occurred in the past, especially during the dry season in pastoral areas over grazing land (CAMP, 2015); however, the fighting prompted a greater movement of herds southward into primarily agrarian areas. Some herds accompanied by armed pastoralists often destroy crops, as was reported in Magwi County, in Madi area, Yei and Mundri

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<sup>1</sup> Interview with Aggrey Tisa, Advisor to the President of South Sudan, May 16, 2015.

<sup>2</sup> The 1.3 million displaced amounts to one tenth of the population, of which 400,000 fled to neighboring countries.

West where conflicts erupted in May 2015. Smallholder farmers cannot afford fencing to prevent livestock from grazing their crops.

In the areas where the livelihood of the population predominately depends on livestock, conflict and insecurity has resulted in more cattle raiding and rustling, disrupting livestock husbandry resulting in great losses in livestock and human life. It is estimated that about 350,000 cattle and 750,000 goats equivalent to the value of 200 million SSP are lost annually through cattle raids and thefts. Unconfirmed reports estimate that 2,500 people were killed and 350,000 displaced by raids in 2009 (MAF Agriculture Sector Investment Plan, 2013.) Cattle raiding also limits access to usual grazing and water sources as well as to livestock routes for marketing. Reduced and weakened livestock deprives households of income, aggravating food insecurity.

In addition, site visits and discussions with traders in Wau and Bor as well as a recent World Bank study confirm disruption of most markets in the conflict-affected zones and in neighboring states with many basic staple foods unavailable or costly (WVB, 2014). The recent upsurge of insecurity by robbery on the roads from Juba to Yei and Juba to Mundri-Maridi threatens agricultural marketing and trade even in the south.

The World Bank estimates that conflict has cost the country a 15% decrease in GDP; and that the incidence of poverty increased from 44.7% in 2011 to 57.2% in 2015. The conflict shifted the GOSS 2014-2015 budget to consumption and spending for security, with little funding for agriculture or investment in physical infrastructure. Almost all investment in larger-scale agricultural development and in trunk road rehabilitation has stopped, although some donors continue funding rehabilitation of roads. Price inflation – reported to be as great as 50% in the recent months (Wau market, 2015) -- and shortages have raised the costs of input supply, power and transport for agriculture. Many informants also report and the World Bank (2015) noted that behavior and incentives are changing among beneficiaries with greater reliance on humanitarian assistance.

### **Production and Low Yields**

**Land Preparation:** Clearing land and soil preparation for seeding is the important first labor-intensive and expensive operation faced by smallholder farmers everywhere. It is especially difficult in the Greenbelt region due to rapid, dense growth on fallow land and thick vegetation and forests. The FARM Project and all farmers interviewed noted limits to a smallholders ability to increase the area cultivated because of the labor needed for land clearance and preparation, even in more arid northern regions (GBG) which have scrub growth rather than dense vegetation. The area cultivated by a household is estimated by the FAO in 2014 to be 0.9 hectare or earlier by African Development Bank in the range of 0.4 -1.7 hectare.

Although the FARM Project promoted “block” farms for FBOs in which land clearance could be carried out communally, their cultivated area did not increase significantly. Similarly, the project reported that land preparation by traditional hoes was a major constraint and hired labor expensive in the Greenbelt. There are farmers in Yei, Magwi and Mundri West who have access to tractor and ox-ploughing services for land clearance and preparation to enable timely sowing. Tractor services for hire are rare and expensive and few ox-plowing services are available; nevertheless, they do exist in some areas and the Team learned of some FBOs which bought John Deere tractors or leased tractor services.

**Yields:** Agriculture remains a subsistence activity by smallholder farmers using simple implements; the average farm size is in the range of 0.4-1.7 hectares. Several factors contribute to South Sudan's low crop and livestock yields which are below African averages (CAMP, 2015).

For cereals, the vast majority of farmers do not use high yielding seeds or plant protection pesticides, fungicides and herbicides. South Sudan's average yield is low relative to most other countries in the region, averaging only 0.97 tons per hectare during 2005-2009 (World Bank, 2012.)

Yields vary greatly within South Sudan, and even within the Greenbelt, depending on seed quality and farmers' agricultural practices (GIZ, 2012). For example, a Cooperative in Yei interviewed by the Assessment Team was producing less than 7 bags of maize per *feddan*; after the FARM Project demonstrated better seeds and practices, its yields increased to 12-15 bags per *feddan*. Similarly, an FBO in Magwi County was producing 5-7 bags per *feddan* and increased to 12-15 bags per *feddan* after FARM's demonstrations. These increases were possible due to adequate rainfall combined with FARM Project training and demonstration on good agricultural practices with seed distribution.

Livestock is generally little developed and not yet commercialized in South Sudan. Nilotic cattle breeds predominate and they remain poor milk and beef producers due both to genetic type and lack of any real production system. Milk yields are less than one liter per day. Some beef is sold in towns and Juba markets, but sheep and goat meat is more profitable (SNV, 2010.) Currently most hides and skins are treated as waste product (MAF, SSASIP 2013; CAMP, 2015.)

**Seeds and Fertilizers:** Quality seeds and fertilizer are essential for the development of agriculture. The provision of imported, quality seeds has been responsible for most of the yield increases in crop production projects (Assessment Team, 2015). However, no breeder seed is being produced in South Sudan and the seed companies are few and small, limited by slow licensing and costs of imports. The four seed companies are the Greenbelt Seed Company, the Century Seed Company in Yei, Afrorganics Seed Company on the Juba-Nimule road, and the Magwi Seed Company (supported by AGRA), which has just begun operations.

Some seed multiplication is beginning at community levels as micro-enterprises. Most seed growers only clean and sort their seeds, which the Team witnessed at the Greenbelt Seed Company in Yei. Some private companies have initiated educational radio programs on crop cultivation and soil management. Nevertheless, most farmers interviewed did not have access to quality seeds in time for planting due to delays in distribution.

The development of a seed industry – a major component of a proposed new World Bank project loan – is essential for farmers to increase yield and improve the quality of their products. Currently, there are no standards for seed processing and treatments, or any agency responsible for quality control on the seeds produced locally or imported.

Fertilizer is currently less of an issue. Low population density and availability of land have allowed large areas to remain uncultivated or fallow in some cases for as long as a decade or more (CAMP, 2015.) Soil fertility is maintained by leaving land fallow for some years or in rarer cases, applying manure (FAO, 2014).

**Pests and Disease Damage:** The ecology of South Sudan is favorable for numerous species of crop and livestock pests and diseases. A great portion of loss in crop yield and livestock may be attributed to

pests and diseases. Diseases and pests are estimated to cause 10-15% losses of crops in the field and in storage and sometimes higher (MAFCRD, 2012).

In Magwi the farmers reported termites and monkeys to be a menace to their crops. Similarly, farmers in Yei were unable to control stem borers in their maize. In Yambio mosaic disease was observed on many cassava plants. There is no quarantine enforcement at airports and border posts to control pests and diseases in imported plant materials.

Livestock diseases debilitate the national herd and is the most critical factor limiting the productivity of livestock. There is high incidence of Contagious Bovine Pleura-Pneumonia and Hemorrhagic Septicaemia in all the 10 states. Black quarter, Anthrax, Peste des petits ruminants and trypanosomosis also debilitate the national herd. Foot and Mouth Disease, highly infectious but nonlethal, is important in all except Warrap State (CAMP, 2015). Black quarter was reported to have killed hundreds of cattle herds in NBG State. Tick-borne diseases are important but are rarely identified due to inadequate diagnostic capacity. Serological screening is being carried out to confirm that South Sudan is free of rinderpest disease (MAFCRD, AIP 2013). Before the conflict, the EU and FAO had focused their projects on strengthening South Sudan's weak veterinary services.

**Limited Labor and Knowledge:** All informants and the literature note that a lack of agricultural labor and knowledge of improved agricultural practices, processing and marketing are major constraints impeding agricultural development. Ninety percent of the population of South Sudan lives in rural areas, but the AfDB estimated in 2013 that almost 80% of farm labor is provided by women in addition to their domestic chores - a fact confirmed by site visits. Young men and women generally do not view farming as a rewarding career and many migrate to towns and cities to find other work. The FARM Project found that labor, when available (often provided by refugees) is expensive and often lacks appropriate skills and that limited labor is the primary limit to farm sizes in Equatoria.

Farmers generally have limited formal education and generally welcome training, especially demonstrations on higher-productivity practices. Projects' staff emphasized that farmers are by nature risk-averse, and understandably wary of new practices without demonstration and visual proof and this often adds to the length and cost of training.

Training and extension services for farmers and herders have been inadequate and are now, in many areas, non-existent due to budgetary and donor cutbacks. Traditional, low productivity agricultural practices continue in most of the country due to the lack of extension and applied research on new varieties and better practices. Most agricultural training is currently carried out by several on-going donor and INGO projects like FARM but cover only a small a fraction of farmers.

**Effects of Climate Change:** Climate change and unpredictability is a worldwide phenomenon that has direct effect on agriculture. In semi-arid and tropical zones climate change manifests itself in more erratic rainfall, faster and heavier flooding, localized droughts and higher temperatures. Agricultural crops and livestock are highly sensitive to such weather fluctuations.

South Sudan is heavily dependent on rain-fed agriculture and has limited institutional and infrastructural capacities to cope with natural climate variability. Climate change has increased the frequency and intensity of extreme weather events such as droughts, floods and heat waves (Sudd Institute, 2015.) Although there are no vulnerability and adaptation studies, prolonged and severe droughts are known to have caused severe water shortages and crop failure. A rise in temperature has also led to outbreaks of

human diseases as well as outbreaks of pests and emergence of new crop and livestock pests and diseases (MAFCRD, 2013). This leads to economic shocks to households and communities, which has also been linked empirically to increased conflict.

In most areas visited the Assessment Team heard reports of changes in rainfall patterns, temperature rises, droughts, flooding in addition to pests and diseases attacks over the last years. The first rains in March - June in the Greenbelt have been erratic and scanty which results in delays in the sowing and growth of plants.

### **Rudimentary Processing, Storage and Marketing**

**Processing and Storage:** In general post-harvest handling and processing involves various basic practices by the farmers, households, farmer-based and producer groups, cooperatives and/or agribusinesses such as drying, threshing, cleaning, grading, sorting, milling, packing, transport and storage. As documented in earlier assessments (USAID, 2009, UNDP, 2012) and confirmed by field visits, most post-harvest handling is carried out manually mostly by young girls and women using traditional methods of soaking, sun drying, pounding, etc. An exception is the number of motorized small mills generally in town markets which make cassava and maize flour. Storage of food crops is often in open containers in household *tukuls* along with the inhabitants. Post-harvest losses in traditional processing and storage are estimated as high as 40% (GiZ, 2013; FARM Project, 2013.) FARM Project reports that the annual loss of crops in post-harvest handling in the Greenbelt is about 570-650 kg per household of the combined total amount of maize, sorghum, beans, groundnuts, sesame, millet and cassava.

The FARM Project, among others, trained farmers and farm households in simple solutions to post-harvest handling such as drying maize on raised platforms, use of inexpensive plastic sheeting, dry storage in corn cribs, metallic containers and emetic bags. The project reports that these simple solutions and increased know-how on post-harvest management reduced losses of food and marketable product by at least 20%.

SNV- and GiZ-supported projects demonstrated that value-added and income can be gained by households and other farm-based groups through improved basic processing such as maize hulling and fish drying/smoking. In the case of beans, value addition potential is very limited although grading, branding and packaging are possible modest value additions. Maize and cassava are generally milled into flour in local markets; community- and farmer-based organizations would have to produce large quantities and have access to technical skills in order to be competitive.

Processing groundnuts and sesame into paste is already done by women often observed in or near markets; local groups may find value-added opportunities to do so themselves. Groundnuts can be processed by households into a variety of products, resulting in value-added. Besides shelled, groundnuts can be marketed as roasted, roasted salted/flavored, or processed into paste or oil. Shelling of groundnuts is done by hand at the farm level by the families or in the market by individual groundnut sellers. Shelling represents a considerable gain in value: the FARM Project reported that a 45kg bag can yield approximately 30kg of shelled groundnuts, a 33 percent increase in value.

Oil palm is grown, but not widespread in Equatoria farms and palm oil extraction is done in traditional ways (crushing and boiling) by households. Large quantities of oil palm kernels and nearby urban markets would be necessary to justify the cost of more modern methods. If farmers had access to urban

markets, community- and farmer-based groups could gain additional income from processing oil starting with making oilseed pastes (GiZ, 2011).

**Power & Communications:** Rural electrification can lead to significant improvements in agriculture reducing losses and improving incomes and food security. Electrification improves storage, food processing, packaging and irrigation (NRECA, 2013). Other than the flour milling in town markets, there is little evidence of other uses of electrical power for agriculture in South Sudan particularly in areas the assessment team visited.

Poor communication infrastructure also imposes additional constraints on agricultural development. Farmers cannot obtain supplier or market information and are unaware of changing commodity and livestock prices. The dissemination of information by government agencies and private companies through mass media such as radios and television, as well as communication technology is generally limited to urban and peri-urban areas (CAMP, 2015).

**Deterioration of Trunk Roads:** Historically, South Sudan's road network was underdeveloped and linkages between rural areas and urban centers were weak. South Sudan's road network is now one of the worst in Africa, ranking far below other African countries in all aspects (AfDB, 2014; MAFCRD Investment Plan, 2013). The trunk road system is further deteriorating from lack of maintenance and heavy humanitarian shipments with consequent increases in the costs of trucking. The World Bank reports that less than 5% of the existing 7,171 km of primary roads are in good condition. With the exception of newly-constructed urban and the Juba-Nimule roads, the entire network is laterite, deteriorated and generally impassable during the rainy season.

All farmers and agricultural officials interviewed reported that many production areas are not served by roads during the rainy season limiting both input supply and extension services as well as marketing. The increase in insecurity and banditry along the roads is further weakening trade and access. This breakdown and high cost of all, but the most local transport is further reducing producers' incentives to generate surplus (FARM Project, 2015.)

### **Land Tenure, Finance and Taxation**

**Uncertain Land Tenure:** Land is a nation's most valuable national resource and usufruct and tenure rights are essential for agricultural development. Currently most of South Sudan's arable land is under customary rights and to a lesser extent statutory ownership. Demarcation and formalized rights enable more productive use of and investment in agricultural land. The responsibility for land use and rights in South Sudan is currently divided among the Ministries of Housing and Physical Infrastructure, of Agriculture and Forestry and of Local Government and Land Commission

The land tenure system in South Sudan is complicated by three factors: the absence of a comprehensive land classification map and enforcement of land use plans according to the existing land laws has weakened land administration system in both statutory and customary land; the lack of legal ownership and usufruct of land in rural areas enables occupation and use by others and contributes to land grabbing; and land administration is difficult, cumbersome and unclear because responsibility over land issues is currently handled by several institutions as noted above.

Because of uncertainty of the land tenure, efforts to ensure equitable access to land have not been very successful. It was not possible to secure land rights for socially-vulnerable people, such as women,

returnees or IDPs despite the fact that the Land Act 2009 and the Land Policy in 2013 stipulated that women have the right to own and inherit land, and that returnees and IDPs should be allowed to have access to land as a process of reintegration to improve their livelihoods. Although women play a predominant role in farming, their land rights still remain insecure in the independent South Sudan.

Unclear land tenure has caused misuse and erosion of natural resources and escalation of conflicts over resources. It has also led to destruction of forests for making charcoal and for haphazard expansion of cultivation into forests (MAFCRD, 2012.)

South Sudan has no comprehensive land classification map, lax enforcement of land use plans according to the existing laws, absence of dispute mitigation mechanisms and procedures, and few clear procedures exist for land acquisition. Customary laws, which in the past regulated land use in rural areas have been weakened and disrupted by conflict and insecurity and are no longer effective in securing rights for communities (CAMP, 2015). The proposed new World Bank project loan includes a component which builds on an earlier USAID project to improve land policy and administration.

**Credit:** Inadequate funds for operating costs and capital investment are one of the constraints hampering the development of agricultural entrepreneurship (CAMP, 2015). Before independence in 2011, the main source of specialized credits for agricultural sector in the country was the Agricultural Bank of Sudan (ABS). The head of the Bank reports that it is not functioning at this time for lack of funds allocated by the Government. Commercial banks and financial institutions do not provide financing for agriculture due to farmers' lack of liquid assets and property for collateral, the risky nature of their business due to drought or floods, the volatile prices of agricultural products and farmers lack of business skills. Lack of finance has generally hindered investment and service delivery, especially at the level of the smallholder farmer. This was confirmed in all the areas visited and by the staff responsible for USAID's Development Credit Authority.

**Taxation:** In principle, agriculture is exempt from taxation under South Sudanese Investment Law and Act. However, the GORSS does not yet appear to have any integrated taxation framework encompassing local authorities with adequate supervision.

Agricultural supply and products are easy to tax, particularly in retail markets and when transported. All interviews with farmers, salesmen and traders confirm an increasing number of taxes, formal and informal, levied during transport and marketing, whether on inputs, crops, produce or livestock. Some reported being taxed both when leaving one county and again upon entering another county. A farmer's organization in Yambio took the initiative to transport its surplus to the large market 493 km north in Rumbek; however, it paid so many taxes on the way that the effort yielded no profit. Agricultural input suppliers in Juba had vocal complaints over multiple tax levies.

This excessive and illegal taxation raises the costs of production inputs such as seeds, fertilizers and feeds as well as the costs of marketing surpluses; these multiple extra costs are a brake on agricultural development.

### **Poor Health and Nutrition**

The lack of reliable health statistics makes it difficult to understand the full scale of the health problems in South Sudan, but it is commonly believed to have some of the worst health indicators in the world. Poor health is a significant constraint on household labor and agricultural productivity in South Sudan.

Maternal mortality rates are the highest in the world, with an estimated 2,050 deaths per 100,000 live births. This figure, combined with fertility rates, means that the average woman in South Sudan has a one in seven chance of dying during one of her pregnancies or childbirth.<sup>3</sup> Malaria is endemic in South Sudan, causing the deaths of an estimated 44,000 people per year. Tuberculosis affects approximately 228 per 100,000 people.<sup>4</sup> Children suffer particularly poor health; approximately one-quarter of children under-five are stunted due to inadequate nutrition,<sup>5</sup> while only one in five children aged one year or under are immunized against measles. Given the available data, South Sudan has the highest under-five mortality rate in the world, at 135 per 1,000 live births.<sup>6</sup>

Most of the population does not have access to clean water. Of the 17 Neglected Tropical Diseases (NTDs) recognized by the World Health Organization, all are present in South Sudan. They include Dracunculiasis, or guinea worm, which is spread through contaminated water. South Sudan had 99 percent of the world's documented cases of the disease in the first half of 2012.<sup>7</sup> HIV/AIDS rates are still fairly low, at an estimated 3 percent nationwide.

Malnutrition is widespread throughout South Sudan, with the three Equatorias having among the highest chronic malnutrition rates despite the enormous agricultural potential. According to the 2010 South Sudan household survey, more than one third of all children under five are stunted in the three Equatoria states. The May 2015 South Sudan Integrated Food Security Phase Classification (IPC) report indicates a further deterioration in the number of people facing severe food insecurity, almost doubling since the beginning of the year, to an estimated 4.6 million people, including approximately 874,000 children under the age of five, facing severe food insecurity.

## Opportunities

South Sudan has the natural resource potential to become both entirely food secure and a major regional supplier and exporter of agricultural products. Its natural resources are abundant and varied.

### Ample Arable Land in Several Agro-Ecological Zones

South Sudan has abundant fertile land and favorable agro-ecological conditions. It has 105.6 million hectares of arable land, 50 per cent of which is considered prime agricultural land with adequate annual rainfall and favorable temperatures for growing a wide range of tropical annual and perennial crops. Rainfall varies from 500 mm per year in the northern States providing a growing season of over 100 days, to about 2000 mm in the southwest, Equatoria States with a growing season of 150-250 days (CAMP, 2015).

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<sup>3</sup> UNDP, "South Sudan: Millennium Development Goals: Overview, #5: Improve Maternal Health [http://www.ss.undp.org/content/south\\_sudan/en/home/mdgoverview/overview/mdg5/](http://www.ss.undp.org/content/south_sudan/en/home/mdgoverview/overview/mdg5/)

<sup>4</sup> South Sudan Ministry of Health, "Basic Package of Health and Nutrition Services for Southern Sudan, final draft," January 2009, p. 19.

<sup>5</sup> South Sudan Ministry of Health, "Health Sector Development Plan, 2012-16, final draft," January 2012, p. 7

<sup>6</sup> South Sudan Ministry of Health, "Basic Package of Health and Nutrition Services for Southern Sudan," p. 9.

<sup>7</sup> WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis, "Guinea Worm Wrap-Up #213," July 16, 2012, [http://www.cartercenter.org/resources/pdfs/news/health\\_publications/guinea\\_worm/wrap-up/213.pdf](http://www.cartercenter.org/resources/pdfs/news/health_publications/guinea_worm/wrap-up/213.pdf).

South Sudan also has diverse soil conditions with high to moderate fertilities from savannah loamy sands to heavy alluviums and light lateritic soils to organic forest soils. These provide multiple options to grow many different grains (maize and sorghum), vegetables and fruits (mangoes, *guavas*, bananas, pawpaws, oranges, lemons, pineapples and avocados) including rare and indigenous finger millet, bulrush millet, upland rice and many varieties of sorghum and oil palm. Coffee, tea and sugar cane are also grown in South Sudan.

The country's soils and rainfall conditions are favorable for agro-forestry and forestry plantations with a wide range of trees from rainforest species such as mahogany, teak, eucalypts, *maesopsis*, acacias and *fagare*, to temperate species including cypresses and pines. (MAFCRD, 2012).

### **Abundant Water in Rivers, Wetlands and Aquifers**

In addition to diverse rainfall zones South Sudan has a variety of water sources including perennial large and small rivers, seasonal rivers, streams, wetlands and lakes, as well as untapped aquifers for wells to provide for water for livestock and for irrigating vegetables in the dry season. The country is bisected by the White Nile and criss-crossed by a vast network of tributaries, lakes and wetlands making a total of renewable water resources to about 2,700 cubic meters per capita (SSCCSE, 2010). The Deloitte Investors' Guide points out that the Nile and its tributaries also provide potential for hydroelectric power generation particularly at Fula and Bedan falls.

Its network of rivers, lakes and alluvial valleys and extensive swamplands offer potential for large-scale fish farming and irrigated crop production. Yet, irrigated agriculture accounts for less than 5% of the total cultivated areas in the country concentrated in Northern Upper Nile State and in towns close to the Nile and permanent rivers using water pumps along the Nile banks for vegetable production (MAFCRD, 2012.)

### **Large Livestock and Fish Stocks**

**Livestock:** South Sudan has the sixth largest livestock herd and the highest livestock per capita in Africa, with an estimated total herd of 11.7 million cattle, 12.1 million sheep and 12.4 million goats. It is estimated that at least 65% of households in South Sudan are livestock producers (i.e. own at least one livestock) of whom 47% are agro-pastoralists, 43% pastoralists and 10% urban and peri-urban residents. Livestock contributes an estimated 15% to the Gross Domestic Product (MAF, 2012).

Nationally, livestock account for 30 percent of total primary food consumption in value terms, a share that is similar across rural and urban households. In three states, livestock products account for close to or more than 40 percent of rural households' primary food consumption (39 percent in Jonglei, 40.3 percent in Western Bahr el Ghazal, and 44 percent in Eastern Equatoria). When measured by quantity of red meat consumption, only Jonglei and Eastern Equatoria have an average meat consumption (i.e., 32 kg and 47 kg per capita, respectively) that is significantly higher than the national average (17 kg per capita) (VWB, 2012).

Cattle herds are concentrated primarily in Greater Upper Nile, Greater Bahr el Ghazal and Eastern Equatoria. Currently, herds are generally kept as savings, prestige and for marriages rather than for commercial production. The management and commercialization of livestock could contribute substantially to food security, economic growth and natural resource conservation as well as mitigation of farmer-pastoral conflict.

**Fisheries:** South Sudan is also endowed with untapped inland fishery resources. It is replete with numerous bodies of water including rivers and wetlands that contain substantial natural fish resource. The Nile provides major wetland and water resources for fresh water fish in South Sudan. The Sudd (proclaimed as a globally-valued RAMSAR site), is the largest source of fresh water fish and breeds eight commercially important species: Nile Perch, Bagrid catfish, Nile Tilapia, Carp and Binny Carp, Elephant-Snout Fish, Stubs, Tiger Fish and Haracins. (FAO, 2015).

While the actual annual maximum sustainable yield is unknown due to irregular data collection, it is estimated to be 40 kg per hectare per year with a maximum sustainable yield of 200,000 tons with value of \$300 million (MARF, FP, 2013; FAO, 2015). There is no commercial aquaculture industry in South Sudan though some subsistence fishponds exist in Central and Western Equatoria States. However, they are severely hampered by a lack of fingerlings, skills and feed availability (MARF; Fisheries Policy, 2012-2016). At the present time, more than 80% of fishing in South Sudan is done on a subsistence basis, mainly consumed fresh, sun-dried salted or sun-dried and smoked and caught by line and hook in traditional ways by the local people living along the Nile (CAMP, 2015).

A project of the Dutch NGO SNV has organized local fishermen in Juba and Terekeka in fishing groups and trained them in value-added processing and marketing. Fish processing units were established to dry, smoke and handle fish in hygienic ways. This improved the market value of the fish, but the imported fish from Uganda were still cheaper.

Fish can support vulnerable rural households, contributing to nutritional needs by diversifying the household food basket and bridging food gaps. The contribution of fish proteins and micronutrients to the daily diet reaches well over 80% for the population living along the rivers and permanent swamps and accounts for 4% of food consumption in South Sudan (FAO, 2015; WB, 2012). It is estimated that 1.7 million people depend on fish proteins for livelihoods, food security and nutrition and/ or income (CAMP, 2015). It is, however, relatively more important in Northern Bahr el Ghazal, Western Bahr el Ghazal, Lakes, and Western Equatoria, and if improved methods of catching, processing and storage are adopted, fish production could greatly increase and contribute to improved nutritional status of the population and overall economy of the country.

### **Extensive Forest and Woodlands**

South Sudan has large and diverse forests and woodlands covering an area of 191,667 km<sup>2</sup> which is about 30% of total land area. The largest forests reserves are in Upper Nile (approx. 566,000 ha or almost half of the total) and Western Bahr el Ghazal (approx. 305,000 ha. or about 25%), followed by Eastern Equatoria (with approx. 134,000 ha. or 11%). The natural forests are however at varied degrees of degradation due to uncontrolled exploitation. Solar radiation, good soils and adequate rains favor agroforestry and, as the British colonial authorities realized and developed, forest plantations with wide variety of tree species such as mahogany, teak, and eucalyptus, as well as temperate species including pines and cypresses.

Forest plantation development has been pursued for various purposes - stabilization of soil erosion, production of commercial wood, etc. Before the war, it was estimated that South Sudan had plantations covering 187,850 hectares. These comprised irrigated *Acacia nilotica* (Sunt) plantations along the banks of River Nile. Plantations of high commercial value, indigenous species such as *Khaya senegalensis*, and *Khaya*

*grandiflora* (concentrated in the greater Bahr-el-Ghazal area), eucalyptus plantations, teak (*Tectona grandis*) *Cacias* and *Neem* plantations spreading over most States. (MAFCRD, 2012).

Substantial teak plantations were established from 1930s onward. It is estimated that teak plantations alone can generate over \$100 million per year, and mahogany in natural forest reserves could be the source of additional income as well. Commercial forestry in South Sudan has the promise to grow and diversify the economy, generate government revenues and provide jobs (CAMP, 2015).

The natural forest resources support the livelihoods of the rural populations by supplying fuel wood, building timber and wood for tools in addition to wild fruits, sheanuts, fibre, gum, grasses and medicines (MAFCRD, 2013). Activities such as making charcoal coupled with clearance of forest for agriculture, uncontrolled fires, uncontrolled grazing and overharvesting are seriously deforesting and degrading the natural forests. A few INGOs support modest reforestation and agro-forestry projects.

## **Special Issues in Agricultural Development**

### **Role of Government**

For economic development, the most important role of government is to maintain security and the rule of law. As the current conflict amply demonstrates, without a modicum of security, normal economic activity cannot take place. Fighting effectively precludes most agricultural activity in many parts of Upper Nile, Unity, Jonglei and Lakes States with the consequent movement of cattle herds and herders southwards causing additional conflicts with farming groups. (See Conflict below.) Furthermore, perhaps due to the shift of GORSS resources to the conflict, major roads are becoming less secure with increasing banditry. This insecurity, along with the deteriorating condition of the trunk roads, is now the primary impediment to agricultural trade nationwide.

The government through its judicial system must also ensure respect for property rights and contracts. The many instances of land encroachments and illegal taxation reported to the Assessment Team interviews indicate that State and local officials are unable to enforce the Land Law and other commercial law (World Bank, 2012; see “Land Tenure” above.) The number of vocal complaints also indicates that the tax laws and authorities are at least unclear resulting in many instances of different types of taxation in markets and on roads, increasing the costs of agricultural supplies, marketing and trade. (See Constraints ~ Taxation.)

Investment in public infrastructure particularly major trunk or interstate roads is also an important role of government. While the GORSS has a plan for road improvements, lack of resources has essentially placed all maintenance and rehabilitation of trunk roads on hold.

Finally, most governments provide support to agricultural development through agricultural research, extension, education and training services as well as economic surveys and emergency stores for reasons of economic growth, rural employment, food security and natural resource conservation. However, in South Sudan research projects and extension services for farmers are generally ineffective or non-existent. In Bor, Magwi, Yei and Yambio, the assessment team found agricultural extension officers deployed at the *payams*, but without transport or presence in the villages or *bomas*. While a few government training facilities such as the Yei Training Center were providing some short-term training sponsored by donors, few farmers outside of donor/INGO projects have access to extension services or training outside.

Representatives of the agriculture-related Ministries and a State Minister emphasized that current GORSS budgets only enable support for employee salaries with no funds available for programs or field agents, trainers, demonstrations or research. Moreover, members of the Assessment Team had direct experience of the inadequate professional knowledge and poor coordination between different levels of the agricultural ministries.

### **Farmer/Processing-Based Organizations**

South Sudan has a history of cooperatives. A Department of Cooperatives was established in Juba in 1953 to promote and develop cooperative societies and Cooperatives were established in several areas such as Juba, Wau, Malakal and Renk. Further development of cooperatives was hampered by the first civil war (1955-1972) and the second civil war (1983-2005). Cooperative development resumed after the CPA with a new law under the jurisdiction of a Ministry of Cooperatives and Rural Development, which was later merged with the Ministry of Agriculture and Forestry in 2011.

In some areas of South Sudan there has been a tradition of communal farming, but in many communities affected by conflicts, traditional social relationships have broken down, making such cooperation more challenging. Most agriculture and food security projects promote the formation of several types of farm-based associations, organizations and Cooperatives, but only Cooperatives have legal status and few have received adequate training, assets and market-access to move from subsistence farming to farming as a business (CAMP, 2015).

In mid-2011 there were 241 registered Cooperatives. The success of some cooperatives indicates that with common interest, leadership and some support, rural producers and households can be organized to pool labor and resources through Cooperatives and other farmer-based organizations and community groups (FARM Project, 2012; World Bank, 2014; SNV, 2015). Such arrangements enable more effective links between widely-dispersed smallholders in rural areas and markets, businesses and the government. For this reason it is the policy of the GORSS to promote and support the establishment of Cooperatives in rural areas, a policy which is generally supported by donors, including USAID. As of 2013, 566 Cooperatives were registered by national and state ministries, of which 38% are agricultural Cooperatives. There are also fisheries and bee-keeping Cooperatives (CAMP, 2015).

However, despite the history, cooperatives in South Sudan are still institutionally in a stage of infancy; many lack effective structure, capacity, assets and finance for sustained operations. The Assessment Team could find no independent analysis or data on the functioning or factors of success of Cooperatives or other farm-based organizations. In view of the GORSS policy and donor support, this analysis is sorely needed.

The Assessment Team visited a few active FBOs and Cooperatives, most formed and encouraged by the FARM Project and other donor/INGO projects. Farmers were reported to lack the incentive and capacity to organize themselves either for block farming or for marketing (for example aggregating their produce in bulk in one location for sale.) In the case of WFP local purchase program (P4P) after several attempts to purchase farmer surpluses in Equatoria, the WFP found it easier to purchase bulk, cleaned food grains from neighboring countries (WFP, 2015.)

## **Agribusiness and Trade**

Business is the engine of economic growth and agribusiness is central to agricultural development. Agribusinesses can be farms and Cooperatives themselves, and also respond to farmer demand for inputs and process and farmer production for domestic and regional markets. The policy of the GORSS is to support and promote agribusinesses to supply inputs and to connect farming to consumer demand through production, handling, processing, transportation, distribution and sale of agricultural products (ASPF, 2012).

In South Sudan, outside of traditional grain millers and traders in markets, agribusinesses are few. Most are based in major towns such as Juba and Yei in Central Equatoria, Yambio in Western Equatoria and Bor in Jonglei states. In Juba, the Assessment Team found only five agribusinesses. The team visited three: Longro South Sudan Ltd, Lojuria Agro-Farming and Trading Company.

Longro South Sudan, established in 2012, imports and assembles 75 hp and 125 hp John Deere tractors with implements and spare parts. It reported selling 100 tractors even at the high prices of \$29,500 and \$59,600 respectively (out of reach of almost all farmers and many organizations). However, 10 farmer organizations/Cooperatives have been able to purchase tractors and the company is seeking ways to finance promising young farmers.

Lojuria Agro-Farming Trading Company started lucrative business in 1998 selling veterinary and agricultural inputs in Juba, Malakal, Bor and Unity State. During the December conflict it lost all its capital in Malakal and Unity State. Equatoria Seeds Company began operating in Juba in 2013 after the crisis. The agribusinesses all vocally complain of high taxes, difficulty in accessing foreign currency and finance, high interest rates (currently 18%) and absence of seed policy. Larger farms and truck farms near Juba were reported to be the main customers for all agro-dealers, but occasionally INGOs also purchase seeds from them

Urban growth and the current foreign exchange situation favors domestic seed production and produce for the urban markets. Therefore, new opportunities are emerging for agricultural investment and agribusiness around Juba and a few other urban areas. However, to take advantage of some of these opportunities entrepreneurs would require Government assurances on land tenure, fixed rates and types of taxation and facilitation of import needs. The current crisis and volatile macroeconomic situation and legal and institutional framework are generally unfavorable for business and investment in agriculture.

Historically and pre-independence the food grain trade in South Sudan was dominated by Sudanese Arab traders, most of whom obtained finance from banks in Sudan. However, after independence, many of the Sudanese traders departed and Ugandans, Kenyans, Ethiopians and others have now become the major traders for both internal and external trade throughout the south. There is a particularly strong Ugandan north-south trade network which currently dominates the country's largest market, Juba. South Sudanese traders are generally local and smaller-scale, lacking the experience, finance and assets to be more competitive and grow larger.

In the areas visited by the Assessment Team most farm production was consumed by producing households with modest surpluses sold to vendors at local markets. Only the most rudimentary value-added processing (soaking, drying) were observed on farms. Domestic value chains not only face stiff

cost competition from regional traders, but have low product quality and no sanitary and phyto-sanitary standards. All trade is hampered by high costs and risks due to poor roads, conflicts and insecurity. Some interviewees indicated that neighboring Uganda and Kenya benefit from value-added processing and export of basic farm products (e.g. honey, teak) which originate in South Sudan.

## **Gender and Youth**

**Gender:** “There is strong gender inequality in the agricultural sector in South Sudan. The civil war has dis-accentuated the role of women in South Sudan. The number of female-headed households has increased, as have the burdens of child and family care. Women are often highly marginalized; gender disparities in access and ownership of asset are considerable; social customs constrain women’s mobility and their participation in decision making, and as well limit their involvement in productive activities.”<sup>8</sup>

As indicated in South Sudan’s Agriculture Investment Plan, significant disparities exist between men’s and women’s roles, access and control of agricultural activities. While women provide the bulk of agricultural labor in South, men typically control access to land and all animals. Men also control cash, fishing equipment, farm tools and bicycles. Women usually only control kitchen equipment and storage items like baskets. In terms of division of labor, men typically undertake land preparation activities such as bush burning or clearing, while women usually plant, weed and harvest - weeding being considered exclusively a women’s task.

As a cross-cutting issue for USAID, detailed gender analysis should be undertaken prior to any new programs to identify gender norms, roles and responsibilities, traditional practices, and gender-related challenges. Analysis needs to determine opportunities and constraints in different value chains, and increase women’s access to training, inputs, information and markets. Experience from the FARM Project suggests that even simple adjustments, like hiring more women agricultural extension workers, can have an impact in attracting more women to participate in farmer’s groups, and empowering them as farmers (FARM Project, 2014). Both GiZ and SNV appear to have successfully promoted and supported women’s groups that have earned income from agricultural production and processing such as beekeeping and poultry raising.

**Youth:** South Sudan has a young population with 60 percent between the age of 18-29, and a population growth rate that will increase this demographic. This group is the most influential segment of South Sudanese society, with the potential to stabilize or de-stabilize the country. Creating employment and incomes by promoting business opportunities and new technologies and management practices could play an important role in making agriculture both profitable and attractive for youth.

Lack of farm labor was emphasized as a key constraint to increasing agricultural productivity by FARM and other programs. The challenge of attracting youth to farming (as opposed to the lure of motorcycles, etc.) was noted by officials at the state level, and was evident in different geographic regions. However, it was also noted that the ongoing conflict and increasing economic pressure could be an important opportunity for attracting youth into farming. Under the FARM project in Yei one

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<sup>8</sup> The South Sudan Agriculture Sector Investment Plan, 2013.

youth FBO was created, its success attributed to the addition of other, non-agricultural (primarily social) activities. Such efforts warrant more research into creative ways to attract and motivate youth to take up farming. Linkages with USAID education programs could also be explored.

## **Conflict**

Earlier USAID conflict analysis predictions about the potential for long-standing internal conflicts between tribes to destabilize the country<sup>9</sup>, sadly, have proven true, supporting the research that post-conflict societies run a 40 percent risk of reverting back to conflict within a decade.<sup>10</sup> Ongoing fighting in Greater Upper Nile not only seriously de-stabilizes the region, but has affected the entire country due to abnormal migration of cattle, causing conflict over grazing and water resources. The current round of conflict has displaced over 1.52 million people since December, 2013 resulting in an increased reliance on emergency relief, and undermined resilience. Increasingly groups who are, or perceive themselves to be, marginalized are becoming violent even in the previously stable areas. Women and girls are at particular risk for sexual violence during and following conflict situations.

While USAID/South Sudan has been applying a conflict-sensitive approach to programming, the current context requires the Mission to go further and make conflict mitigation a core objective of all its programming. This will require conducting ongoing and sophisticated conflict analysis, given the complexity of South Sudan and speed with which the situation changes. Whenever resource transfers are involved, such as through provision of seeds, tools, etc., it is particularly critical to ensure that interventions are supporting mitigating factors (connectors) and building social cohesion, as opposed to unintentionally having a negative impact on the situation.

In the current context it is essential for USAID to be highly sensitive of how programs affect the conflict dynamics; details of both how assistance is provided and what is provided - how much, to whom, by whom, when, and where – are critical to supporting peace. The JFSP appears to be successful working on both sides of the conflict, maintaining neutrality and flexibility and may provide a model of using a food security program to help defuse tensions and develop shared interests.

## **Question II. What have been major lessons learned and evaluation findings in agricultural development in South Sudan since the beginning of the conflict in December 2013?**

### **Lessons Learned in Agricultural Development**

The Team was only able to locate two independent evaluations and no lessons-learned confirmed by survey, research, or other analysis - not surprising for a new nation in such a deep crisis. All projects' monitoring, evaluation, and research efforts were halted by the violence, and many documents (and all USAID files) destroyed. However, from the evaluations, reports, interviews, and field observation, the team has a high degree of confidence in the following:

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<sup>9</sup> USAID South Sudan Conflict Assessment, 2013.

<sup>10</sup> Paul Collier, 2006. *Post-Conflict Recovery*.

1. **Changes promoted by projects are more likely to sustain themselves if beneficiaries contribute to costs in-kind (e.g. labor) or with other resources such as food or cash.** The FARM Project experienced higher production when farmers had to pay 20 percent of the cost of previously-free seeds and tractor services. Almost every donor and INGO mentioned the issue of dependency on relief and subsidies and need to shift to contributions by beneficiaries. SNV and GiZ in particular noted that contributions or investments by beneficiaries appears to increase prospects for sustainability.
2. **Increases in on-farm production will only be sustained if farmers can readily market surpluses; market “pull” is a necessary incentive for production increases.** The FARM Project has struggled with this issue due to poor, insecure roads, lack of intermediate transporters, and limited effective demand. Food grain surpluses from the southwest can meet much of the national food deficit to the north. A WFP local purchase project, Purchase for Progress (P4P), provided some demand for local surplus; however, overall, the P4P local purchase effort still has a 40 percent default rate due to failures of traders and ways to aggregate surpluses. Competition from lower cost imports also affects marketing. FARM and other projects and market surveys all confirm that trunk road improvements, and security, control of inflation and local purchase of food grains are critical to increase production.
3. **Training farmers as well as primary processors in improved practices relevant to their on-farm situation usually results in increases in their productivity in the short-term.** Demonstration is the most effective training method. The experience from USAID’s FARM Project and JFSP, smaller GiZ projects, FAO current experience, and the MAFCRD itself all confirm the positive results of farmer training, whether by demonstration plots, at field days, in training centers or otherwise, South Sudanese farmers and post-harvest handlers will learn and apply appropriately-scaled new practices. Many interviewees and most farmers responded that this training was the most valuable aspect of agricultural development projects.
4. **Farmers, producers, and others with common interests will, with some support and often building on traditional structures, organize themselves and generally increase productivity, resilience, and economies of scale.** Farmer and community-level organizations share needs for heavy labor and services, manage productive assets in common, reduce input and marketing costs, and improve primary processing. About one in ten become legally commercial. Farmer-based organizations were a cornerstone of the FARM Project, more so after recommended by its mid-term evaluation. Rural groups formed on common interests were central to the successes of SNV’s value-added projects. The JFSP reported that local FBOs provided support to members to escape fighting and then to return and recover. FARM Project staff noted that, since FBOs have no legal status until/unless they meet the criteria and can register as Cooperatives, FBOs were encouraged to establish their own by-laws to build cooperation and cohesiveness.
5. **Relatively modest changes in traditional practices within the capacity of farming households can result in increases in product and/or revenues of 20-30 percent.** These include planting seeds individually, in rows with recommended spacing, drying and cleaning, and protected storage. Farmers in the FARM project realized significant yield increases from “good agricultural practices” alone and reduced losses by drying and cleaning with inexpensive plastic tarpaulins. GiZ projects reported substantial value-added from primary

processing. FAO indicated similar results. Improved seeds, of course, are a primary factor in higher yields; however, they have been heavily subsidized by projects including FARM and are not readily available in time for planting and often too costly. Seed multiplication is carried out on a very small scale and offers opportunity for entrepreneurship and modest incomes for farmers and FBOs.

6. **Projects are not cost-effective in isolation from one another and must be interactive in communicating and collaborating with other projects, local officials, and interested parties to vet plans, share best practices, and seek complementarities.** Poor communication and coordination among implementers and donors was reported by most interviewees, and is a major finding and recommendation of the Farm Project mid-term evaluation. Good relationships with State officials and other projects appear to be a factor in success and sustainability. The RAPID Project evaluation recommended broader coordination and communications. This need also surfaced in discussions with donors and project implementers and was evident from literature reviews.
7. **The ability of projects to help their beneficiaries to withstand “shocks” such as the current crisis depends both on appropriate interventions supporting livelihoods and on flexibility to adapt to changing circumstances.** In environments with a high-risk of shocks, inputs and technologies should be carefully analyzed for their ability to withstand external changes, e.g. markets collapse, shallow wells drying up, stolen tractors, higher-yielding varieties wilting, etc. Strong community-level organization appears to be an important positive factor. Contingency options enable quick responses to immediate needs. USAID, especially FFP, has long experience in adapting development programs to changing circumstances. The FAO appears to have successfully integrated development and emergency response including kits to initiate production activities and vouchers to purchase needs and stimulate markets. The JFSP is an example of a project that has evidently withstood a major shock (fighting and destruction, looting of offices and stocks) and quickly shifted to emergency response and recovery. (See Recommendations.)
8. **Linking shorter-term emergency assistance with longer-term development programming in protracted crises can not only increase effectiveness and sustain earlier development gains but also help mitigate conflict.** It is likely that emergency humanitarian needs will increase and the conflict’s impacts will spread in the near-term. Therefore, providing “layered and integrated interventions”, as called for in USAID’s recently released Annual Program Statement (APS), is critical to improving recovery with resilience as well as mitigating conflict and building for longer-term development. The JFSP, FAO’s combined emergency and development programming, among others, appear to have defused conflicts between IDP and host communities and has demonstrated the flexibility and creativity move from short-term emergency towards development.
9. **Animal traction is a proven, sustainable technology in moderate rainfall areas of South Sudan (such as GBG as well as many areas in Africa) and ameliorates labor shortages, ensures timely land preparation and builds farmer-herder relationships.** INGO project introduced ox plowing, widely adopted in Lakes State, which has loamy sandier soils. Several projects are now supporting the expansion of ox plowing. The FAO has long experience with animal traction and FARM Project has also successfully trained groups of young

men as ox plow operators for lease. While no studies were found on costs and benefits, farmer interviews, adoption rates, and demand indicate significant economic benefit.

### **Question III. What are the existing and planned major programs and investments in agricultural development by all actors, government, donors, firms, INGOs, etc. at this time?**

The Assessment Team encountered difficulty obtaining specifics or funding details for other donor projects. The CAMP Annex IV mentions 17 “development partners” in the sector, but other documents and interviews indicate only five major donors currently supporting agricultural development in addition to USAID: the European Union (EU), Japan through JICA, Germany through its BMZ and GiZ and the Netherlands primarily through SNV and the World Bank. UK’s DFID and Canada’s CIDA appear to be phasing out support for agricultural development. Most donor projects support the emphasis on food security in the Ministry’s 2012-17 Agriculture Sector Policy Framework.

JICA focuses on long-term technical cooperation with the GORSS. JICA’s major program since 2012 is support to the Ministry of Agriculture and Forestry and the development of a national “comprehensive agricultural master plan” (CAMP); it also chairs of the agriculture-natural resource stakeholders group of donors, implementers and ministry representatives. The CAMP Annexes are a valuable source of information on agriculture and the Plan is in final draft with a listing of over a hundred project proposals. JICA plans to support smallholder horticultural projects in the Equatorias.

The EU has focused on Bahr el Ghazal, and starting with its large Food Security Thematic Program at independence, has supported a large number and variety of projects in livestock, irrigation, fisheries and overall rural development. It is providing substantial support to the FAO’s emergency programs to provide seeds and livelihood kits and plans to continue supporting programs, largely through the FAO, in Greater Bahr el Ghazal.

GiZ has carried out analyses of different value chains, but believe a project is not currently feasible. They primarily support local-level projects to improve livelihoods and community-level production and producer organizations, peacebuilding and animal health in both northern Bahr el Ghazal and the greater Pibor area.

The Netherlands, often through its NGO, SNV, uses a bottom-up approach to support a variety of smaller projects in water supply, livestock, afforestation, seeds and community-level production and processing.

The World Bank is currently developing a large project loan with the MAF focused on the Equatoria region with two large components, seeds and agricultural extension, with smaller components for small-scale enterprise and a fund for innovations in agricultural development. Board approval is pending due to the crisis.

A large number of International Non-Governmental Organizations (INGOs) are working in agriculture. According CAMP Annex IV, 29 INGOS support food security projects, most to improve production, processing and marketing at community-levels.

Road rehabilitation is critical to agricultural development and several donors, USAID, the EU, DFID, are supporting rehabilitation of feeder roads.

Most donors and INGO's interviewed noted contingency planning to rapidly reduce staff and development programming if the crisis deteriorates further.

#### **Question IV. What are the key resiliency issues at local levels and how can resilience be built into South Sudan's agricultural development?**

In the last decade, over 70 percent of USAID's humanitarian assistance has been for only 10 countries, generally in response to crises. Prior to secession, Sudan was the largest recipient. South Sudan continues that legacy as much of the country has endured decades of nearly continuous war and hardship, with brief respites during the CPA and initial period of independence. While the people of South Sudan have weathered many crises and demonstrated resilience, few gains in agricultural development are evident.

The repeated cycle of crises and emergency aid in countries such as South Sudan have led development partners and analysts to more closely consider the linkages between humanitarian and development assistance, relief to development continuum, conflict modifiers, disaster risk reduction (DRR), and most recently, resilience. In 2012, USAID established a policy on resilience which stated, *"Resilience is the ability of people, households, communities, countries, and systems to mitigate, adapt and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth."*<sup>11</sup>

The deteriorating security and macro-economic situation and sharply increasing humanitarian needs which are overtaking the development agenda in South Sudan is the challenging context for building resilience in agriculture. The situation has resulted in some revision of USAID/South Sudan's Operational Framework already. Transitional Objective I (TOI) is being modified to 'promoting resilience' while the other two TOs, 'enable a lasting peace' and 'protect development gains', can be supported within a resilience framework.

Consistent with the new policy, to effectively build resilience USAID/South Sudan has to geographically focus and layer, sequence in time, and integrate objectives of its humanitarian and development programs through:

- Joint problem analysis and objective setting;
- Intensified coordinated strategic planning on resilience between development and humanitarian programs;
- Mutually informed project designs and procurements; and
- Robust learning.

Central to building resilience for food security, and vital in South Sudan, is the ability to focus on the longer-term agricultural development even in the face of growing humanitarian needs and food insecurity. This new approach of adopting joint and integrated analysis, planning, and programming has to be institutionalized as the operational model, using resilience as a common objective across its project portfolio.

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<sup>11</sup> USAID Policy and Program Guidance: Building Resilience to Recurrent Crisis, December 2012.

USAID/South Sudan has already cancelled a proposed agricultural development procurement (MAGIC) because it was out of sync with the growing crisis and food insecurity. Some of USAID's programming, notably the JFSP and the recent APS, are already bridging the divide between humanitarian and development programs by addressing immediate food security needs while laying foundations for longer-term agricultural development. A close study of the JFSP for lessons learned is needed, particularly its apparent ability to flexibly respond to rapidly changing circumstances. The relations with local officials, community-level organizations, and infrastructure and beneficiary capacity, which the project built; as well as its complete neutrality, contributed to the resilience of the communities in their ability to recover from fighting, destruction, and displacement.

There are also important lessons from the recently-extended FARM project, as frequently referenced in this Assessment, on building the capacity of farm-based organizations, not only to improve production, processing, and marketing, but also to provide a community-level socio-economic structure for stability and resilience. However, the challenge will be to pull together the lessons from these and other projects to inform the focus on resilience in new programming. Increasing adaptive capacity at the household and community level will be key to improving communities' ability to recover from the current crisis.

While the crisis is increasingly national, building resilience may be most important in the states north of Equatoria because these areas are suffering greater, more proximate impacts from the conflict and food insecurity. While not directly affected by the conflict, Greater Bahr el Ghazal has significant numbers of vulnerable people, with over 80 percent of the counties in Northern Bahr el Ghazal and Warrap classified by the IPC at critical nutrition levels while Lakes and Western Bahr el Ghazal States are classified as serious. USAID would be able to achieve greater resilience results by diversifying geographic areas and programming of development assistance northward from Equatoria to Greater Bahr el Ghazal where the needs are greater. Specifically, USAID could target those areas of Greater Bahr el Ghazal with significant vulnerable populations, including recent returnees from Sudan, with agricultural, livestock or fisheries potential, and where other donors, e.g. the EU, are not engaged.

New programming focused on building resilience would include many of the activities outlined in the APS under *Agriculture, Livestock and Fisheries* and *Economic Opportunities*, including:

- Supporting new and existing farmers groups and FBOs;
- Providing training and inputs on good agricultural practices, seed multiplication, primary processing and storage, livestock and fishery improvement, animal traction, etc.
- Emphasizing nutrition through education and demonstration gardens and kitchens;
- Strengthening relations among different communities including reconciliation, peace-building and conflict mitigation and management; and
- Targeting women, who provide the majority of the labor in agriculture, by increasing their skills and participation; and, engaging youth in agricultural development.

Cooperative agreements will generally enable closer work with communities and faster response to changing needs and circumstances while still maintaining close USAID involvement. The FARM Project and JFSP demonstrate the importance of direct community and local officials' participation, from inception onwards, in setting priorities and developing specific activities. Both projects, as well as reports by other donors (GiZ, SNV) highlighted the importance of ensuring communities are involved in

identifying priorities and having a stake in its success, ideally contributing to it either via labor or other means, countering any growing tendencies of dependence on external aid.

**Question V. Given USAID’s security and process constraints as well as its comparative advantages and new Operational Framework, what are its best options for programming and interventions in South Sudan’s agricultural development during this crisis?**

**Assumptions**

This Assessment’s recommendations are based on three assumptions:

First, USAID’s Global Feed the Future initiative and its past experience and credibility in agriculture in Africa, including South Sudan, gives it both the opportunity and standing among donors to play an influential role in South Sudan’s agricultural development even in the current crisis situation.

Second, the current national crisis and constrained operating environment will continue, perhaps even worsen, and is unlikely to improve significantly in the near future.

Third, food insecurity is rising sharply — 4.6 million people were classified as severely food insecure by July (IPC, 2015) — and will continue in the near-term, requiring substantial resources by all donors.

USAID’s range of options for development programming are therefore limited, and implementation will face increased costs.

**Major Recommendations**

**Recommendation 1:** USAID should capitalize on FtF and its experience and take a pro-active, leading role in policy and other dialogue on food security and agricultural development through CAMP, the Food Security Working Group, and other fora. (Appropriations language does not appear to prohibit dialogue.) Major issues for dialogue would include learning and knowledge management and constraints to entrepreneurship and marketing such as roads, security, land, and taxation.

**Recommendation 2:** Related to one above, USAID should promote closer collaboration among all donors, implementing partners, and projects in agricultural development and food security to spur complementarities and promote cost-effectiveness through best practices and lessons-learned in current and future interventions. USAID should consider initiating a specific learning and knowledge management effort linked with a university or member group to develop an independent database for surveys, analyses, best-practices, and lessons learned. This would also directly contribute to USAID’s Learning Agenda in its Operational Framework. For instance, there is mutual interest and development gains from sharing and learning from the various models of local and community-level development and of transition from humanitarian to development assistance.

**Recommendation 3:** USAID should consider grants/cooperative agreements as the most appropriate procurement instrument in the current crisis situation. Grants have significant advantages over contracts: more flexibility, lower cost and liability and usually greater cost-effectiveness working at the community level. Cooperative agreements ensure substantial involvements. Contracts like MESP could provide the necessary monitoring, information collection, and knowledge management.

**Recommendation 4:** USAID's Operational Framework assumptions should be revisited. It did not fully anticipate a deep, protracted crisis and at least three of the six assumptions are no longer valid. An update may change the choice and specification of objectives, as well as project design going forward.

**Recommendation 5:** USAID should immediately support and participate in a study of the Jonglei Food Security Project to determine lessons-learned and best practices as important considerations for new programming of development assistance. A study is currently being planned.

**Recommendation 6:** In the current situation, new programming should meet several criteria: avoid over-reach; ensure flexibility and response to changing circumstances; include closest possible collaboration and sharing of experiences with similar projects and with State officials; and focus on resilience and food security through farmer and other community-level local organizations and modest improvements in production, post-harvest handling, and marketing of surpluses. Gender and youth should also be central considerations and not add-ons.

**Recommendation 7:** The new programming should have a specific objective of building/strengthening the capacity of farmer and other producer-based organizations and, wherever possible, local-level "ag-entrepreneurism" to produce, process, and market surpluses.

**Recommendation 8:** Since the FARM Project's achievements are not yet fully sustainable, the new project(s) should include some effort to build on the investment and further strengthen FBOs and their entrepreneurship. For example, the new project(s) could select, support, and study two different sets of the many FBO's supported by FARM Project in the two critical phases of formation: a set of newly-formed organizations which require training and cohesiveness and a set of mature organizations which are "graduating" towards registration as enterprises or Cooperatives. This would not only build sustainability of the organizations and resilience for the households, but also provide best practices and lessons-learned.

**Recommendation 9:** USAID should also consider diversifying geographic area northward from its current focus on Equatoria to other secure areas where gains in food security may be greater. There are many other areas of agricultural potential which need local-level organizational development for improved production and processing which are closer to conflict-affected areas where food needs and livestock use conflicts are greater, i.e. North & West Bahr el Ghazal and potentially Lakes States. As noted Bahr el Ghazal is an area of extremely low yields. While expanding agricultural programming northward may have limited impact on food security at a national level compared to deeper investments in Equatoria, such an initiative would render assistance to households and populations made vulnerable by the ongoing conflict. Current lack of transport options from areas of surplus to areas of need have already rendered Northern Bahr el Ghazal the state with the highest levels of projected malnutrition.

**IPC in figures: Population distribution for lean season IPC projection (May - July 2015)  
4,610,000 people projected to be in critical food needs**

State	Mid 2015 Population (NBS)	Minimal (IPC 1)	Stressed (IPC 2)	Crisis (IPC 3)	Emergency (IPC 4)	Famine (IPC 5)	% IPC 3+
Central Equatoria	1,554,187	1,220,000	190,000	145,000	35,000		12%
Eastern Equatoria	1,122,365	685,000	290,000	150,000			13%
Jonglei	1,759,071	170,000	490,000	535,000	235,000		44%
Lakes	1,075,135	185,000	340,000	550,000	75,000		58%
Northern Bahr el Ghazal	1,368,984	115,000	440,000	610,000	205,000		60%
Unity	1,011,925	35,000	405,000	385,000	165,000		54%
Upper Nile	1,214,871	125,000	300,000	490,000	205,000		57%
Warrap	1,276,953	90,000	565,000	545,000	75,000		49%
Western Bahr el Ghazal	526,666	165,000	160,000	160,000	40,000		38%
Western Equatoria	784,492	675,000	100,000	5,000			1%
<b>Total</b>	<b>11,694,649</b>	<b>3,465,000</b>	<b>3,280,000</b>	<b>3,575,000</b>	<b>1,035,000</b>		<b>39%</b>

**Recommendation 10:** The new programming should also strive to link humanitarian and development assistance and build resilience, e.g. support for and facilitation of WFP local purchases by aggregating, storing, and improving the quality of local surpluses and/or joint OFDA and FFP Title II and DA programming to integrate humanitarian response with building resilience and longer-term agricultural development.

**Recommendation 11:** The new project(s) must contain a collaborative learning and adaption mechanism both to inform changes and new activities in changing environment and to inform others and other new projects going forward. Important Learning Agenda questions include: What are the best models for developing FBOs and similar producer organizations including primary processing groups? What are the best practices and factors in the success of FBOs and other local producer/processor organizations? What are the most successful ways to spur micro- and small-scale entrepreneurship at local levels? What are the best approaches to joint programming of humanitarian and development assistance?

**Recommendation 12:** New programming should include ways or collaborations to carry out basic nutrition education for women and their older children with demonstration kitchens and related training through FBOs and other community-level organizations.

**Recommendation 13:** The new project(s) should include some provision, if only through pilots and analyses initially, of how smallholders, fishermen/women, and herders can best build their resilience and realize the potential of livestock and fisheries in Equatoria and Greater Bahr el Ghazal. Livestock is particularly important in the national life, politics, and economy and potential interventions should be explored. The FAO has undertaken research, has hands-on project experience, and is a valuable resource.

## Other Recommendations

**Recommendation:** Any new programming for Equatoria should be in close collaboration with the planned Food Security and Agricultural Development Project loan by the World Bank and its major seeds and smaller private sector components. Coordination would be particularly critical should USAID decide to phase-out all assistance to FBOs and marketing in Equatoria.

**Recommendation:** USAID should find ways through new programming (or PIO transfers to other donors) to build upon earlier investments and continue support for farmer training at the Yei Training Center and in farmer field schools.

**Recommendation:** New programming should consider labor demands and shortages in agriculture. Animal traction, plowing services, and associated equipment manufacture and repair appear to be a way to improve planting, reduce labor needs, and provide entrepreneurial opportunities for young adults.

**Recommendation:** The focus on food security means a focus on priority, marketable food crops for the different regions as follows:

- Equatoria: Upland rice, groundnut, finger millet, cassava, maize, pigeon pea, vegetables and fruits
- Greater Bahr el Ghazal: Sorghum, millet, groundnut, sesame, pigeon pea, vegetables and fruits

As in item 13 above, livestock (including small ruminants) and fisheries should be considered as an important element as sources of food, income and, for cattle, a source of traction wherever possible.

# ANNEXES

## ANNEX I – SCOPE OF WORK

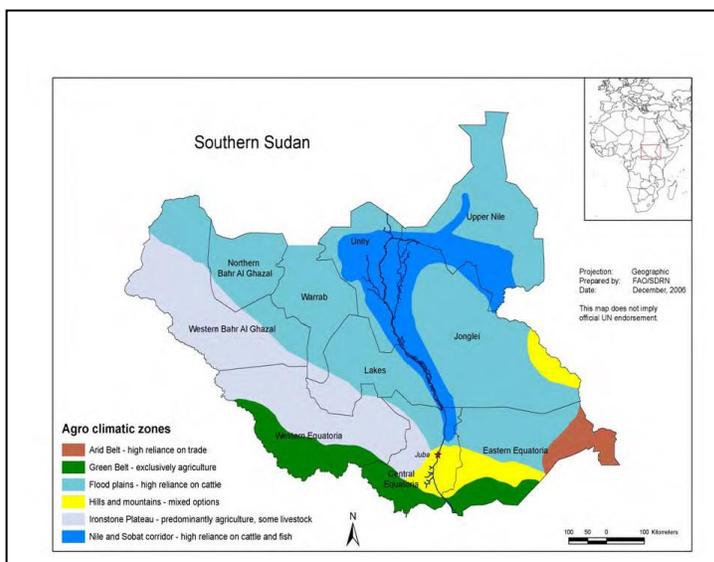
### USAID South Sudan Agricultural Sector Assessment

#### Background Information

South Sudan, officially the Republic of South Sudan, is a [landlocked country](#) in northeastern [Africa](#) that gained its independence from [Sudan](#) in 2011. As a newly sovereign nation, South Sudan faces numerous challenges as well as opportunities as it transitions. The country has promising economic potential in large part due to Oil reserves, but also as a result of substantial mineral reserves, possible market for ecotourism, livestock, rich soils, abundant water, and river access which can facilitate international trade. Despite such resources, in the four years since South Sudan declared its independence in July 2011, the country has not experienced expected development gains. The fighting between South Sudan government troops and rebels has all but stopped oil production in Unity State, one of the country's two oil production areas. Despite South Sudan's severe poverty, lack of infrastructure, almost total economic reliance on the oil sector and a nearly complete absence of private sector employment, the new nation has a very promising amount of uncultivated, arable land with excellent potential for agricultural productivity.

Agricultural development in South Sudan is considered to be a driving force for economic diversification, poverty reduction and food security. However, there are major constraints that currently hinder growth in the sector. They include the high price of transportation and marketing systems within South Sudan, which makes it difficult for South Sudanese farmers to compete with the price and quality of imports. Additionally, a lack of government capacity to provide extension services to farmers coupled with low-quality inputs, poor farming methods, insufficient understanding of the market and limited access to financing have led to low crop yields and reduced farmer revenues.

Cultivated area in Southern Sudan has historically ranged between a minimum of one percent and a maximum of two percent of the total area (i.e. 650,000 – 1,300,000 ha). According to FAO-WFP (Crop and Food Supply Assessment Mission for Southern Sudan-CFSAM 2009), about 1 million ha were put under cultivation in 2008, an increase from 2007 levels likely due to increasing numbers of returnees. Harvest of the “traditional” (non-irrigated) sector for 2008 was estimated to be 1.25 million tons of cereal crops. Sorghum is the main cereal, followed by millet and maize, with an average yield of 1.01 tons/ha (but ranging from 0.75 tons/ha in Bahr el Ghazal to 1.5 tons/ha in Yambio). These figures are for the traditional (non-irrigated) sector. Average yields for Africa range from 1.04 to 1.14 tons/ha.



## **Agriculture Challenges in South Sudan**

Despite great potential, numerous challenges have stifled economic and agricultural growth in South Sudan, which has given rise to rampant food insecurity. As a result, South Sudanese farmers are unable to compete with imports in both quality and price. One major constraint is chronic low production, which has resulted from a number of factors, which include low-quality inputs, utilization of poor farming methods, and a lack of access to proper farming machinery. Farmers have also been unable to control increasing incidences disease and pests, which have resulted in yield losses. As a result of low production, few dealers are interested in purchasing, aggregating, storing, or transporting crops. Consistent low yields have also led to persistent donations of agricultural inputs by donors and NGOs, which have contributed to a culture of dependency that has disincentivized the development of a commercial supply system.

Farmers also suffer from an inability to properly market their crops. There is a general lack of market knowledge and understanding as well as specific pricing information. This lack of understanding has led to a distrust of dealers. Additionally, low profits make it difficult for farmers to fund improvements or obtain financing. Many of these issues could be addressed by the formation of cooperatives; however, low population densities coupled with traumatic war experiences have left farmers hesitant to become involved.

Finally, farmers must work in an often difficult operating environment. Land tenure systems remain unclear and are inconsistently applied across the different levels of government. Additionally, the lack of infrastructure makes getting crops to market extraordinarily difficult. The lack of a viable road system makes the transport of crops extremely risky and increases prices.

To assist the Government of South Sudan in overcoming these challenges, USAID supports sustained and inclusive agriculture-led growth to improve economic opportunities in South Sudan. Increasing household productivity, linking communities to markets, and building strategic partnerships will better enable South Sudanese to capture market opportunities, and thereby raise household incomes and reduce poverty. USAID works with core government institutions on policies and systems to improve agricultural productivity and investment. Investments in infrastructure, such as feeder roads, are expanding economic activity. To secure a foundation for sustainable agricultural development, small-scale farmers and businesses will need to identify and capture market opportunities. This entails expanded business capacities at both the household and firm level, such as understanding how to meet market standards and demand, forming functional businesses units, and building relationships with input suppliers, processors, consolidators, and wholesalers. Lack of infrastructure also remains a significant constraint to market development in South Sudan.

### **USAID Agricultural Projects Focus in South Sudan**

#### **I. Farm Sudan**

On February 17, 2010, USAID awarded a 5-year, Farm, Agribusiness, and Rural Markets (FARM) project to Abt. Associates, a U.S. based for-profit company. Sub-contractors under Abt. Associates are ACDI-VOCA, Action Africa Help International (AAHI) and RSM Consulting. The FARM project was officially launched in May, 2010. The FARM project is focused on the Greenbelt, an area with favorable rainfall and high agriculture potential that cuts across the southern portion of the three Equatoria States (Western, Central, and Eastern Equatoria). FARM operates in three counties per state and three payams per county, which were determined by consultation with State and local authorities.

## **II. Jonglei Food Security Program (JFSP)**

This project was designed to use a combination of FFP and development funds to improve the food security of 149,661 chronically and transitory food insecure households in eight counties of Jonglei State for the period of 3 years (2012-2015).

## **III. South Sudan Livelihoods Annual Program Statement (APS)**

The USAID/EG Team working with OFDA and FFP support improve livelihoods and promote recovery with resilience for the more heavily conflict-affected areas in South Sudan and to lay the foundation for longer-term peace and stability by ensuring activities encourage positive inter-communal and intra-communal interactions where possible. The activities under APS include: Infrastructure, Agriculture, livestock, and fisheries, Economic Opportunity and Water, Sanitation, and Hygiene (WASH) activities

### **Existing Performance information Sources**

Some of the background documents that can be used as a reference by the consultant include:

- Analysis and recommendations for integrating nutrition and WASH into agriculture and health programs in South Sudan
- The Farm project smallholder farm value chain analysis for greenbelt areas of Equatoria
- Agricultural sector investment plan
- Why gender targets low
- Markets for Agricultural Incomes and Competitiveness {successful contractor will set a new project name upon implementation
- Challenges and solutions for considering climate change as part of USAID agricultural programming with evidence from the scientific literature and internal and external reports
- Feed the Future Guide to Supporting Sound Policy Enabling Environments
- Electrification and Agriculture: Linkages to Food Security in South Sudan
- Framework for Improving Food Security Programming in the Equatorias, South Sudan
- USAID/South Sudan Program Portfolio from EG Agriculture
- Expanding Agriculture and Food Security Activities in Southern Sudan Assessment Report For USAID/SUDAN ECONOMIC GROWTH TEAM.
- FARM Annual Work Plan\_2013
- JFSP - EG FY2012-13 Results Framework and IPTT –Revised
- AGRA PMP
- Sudan Ag SOL-668-12-000007

### **Purpose of the Assessment**

The assessment is expected to focus on agricultural productivity, agricultural trade, and capacity building, including associated primary challenges in light of the current political environment, opportunities and constraints, and past successes. The assessment will assist USAID/South Sudan identify programmatic options for agricultural portfolio interventions.

This study will provide USAID/South Sudan Economic Growth team with a better understanding of the current agricultural gaps and needs in the agricultural sector, as well as understanding of where USAID should engage in the future, keeping in mind both the gaps and USAID's strategic interests and comparative advantage. The study will also assist USAID/South Sudan to reach decisions related to any modifications necessary to improve/focus its agricultural portfolio in light of the current political and economic environment. And further, the Mission will understand the strengths and weaknesses of the present models and approaches to agricultural sector and document lessons learnt.

## **Audience and Intended Uses**

The main audience of the study report will be the USAID Mission in South Sudan, specifically the Economic Growth Team, who will use the study findings and recommendations to review USAID's investment in agricultural sector in South Sudan. The partners and counterparts will learn about current gaps in agricultural sector that are relevant to their programming in the country. The report could be used to help government and other development partners adjust strategies and re-focus future investments in the agricultural sector. The study will also recommend for USAID and its partners relevant and effective models and approaches to be employed in agricultural sector in South Sudan.

## **Assessment Questions**

Given the assessment purpose, audiences, questions and anticipated uses of the findings, this assessment is expected to extend frontiers of knowledge of Economic Growth Team regarding if and how to redirect its agricultural portfolio in South Sudan. The broad study questions will further be unpacked during Team Planning Meetings (TPM). Participants in this meeting will include the MESP team, consultants for the assignment, and key USAID staff. The assessment will focus on the following technical areas: agricultural productivity; agricultural trade with special attention to storage, processing and transport; and capacity building.

## **Study questions**

1. What are the current challenges and opportunities in the agricultural sector in South Sudan?
2. Who are the other donors operating in the agricultural sector and what are their comparative advantages?
3. Considering USAID/South Sudan's Operational Framework priorities, what technical areas, geographic locations, and at what levels of government should USAID continue to support?
4. What strategic approaches and models should USAID/South Sudan employ to support an improved agricultural sector while identifying synergies, opportunities, coordination and collaboration with other donors?
5. What are some of the recommendations for USAID/South Sudan to best support resilience within agricultural communities with regard to conflict and climatic-related events such as drought?

## **Study Design and Methods**

This study will undertake a situation analysis of the entire country-wide agricultural sector and systems to understand what needs and gaps exist. This will include forecasting of future agricultural sector needs.

Data collection methods may include Key informant interviews with USAID staff, GoSS staff (national, state, county), other donors or stakeholders in addition to an available document and data review

Beyond this situation analysis the study will also identify areas (geographic, technical, levels of government, such as national, state, county where other donors are focusing their efforts and examine other partner's operational models. To answer the questions, the study will need to understand where USAID should or could engage by aligning the needs/gaps identified with USAID's strategic interests and comparative advantage. This could be done using a modified Risk Analysis tool or modified SWOT analysis framework.

For example:

<p><b>FIRST</b></p> <p><i>Opportunities</i> – From the findings/answers to Question 1, what are opportunities for engagement (i.e. what are the gaps/needs identified)? Are these immediate or forecast for the future?</p>	<p><b>SECOND</b></p> <p><i>Weaknesses</i> – Where are areas or issues that USAID does not want to or cannot engage with? These can be eliminated from further analysis or discussion. (This can be shared with the team in early discussions)</p>
<p><b>THIRD</b></p> <p><i>Threats</i> – This could be an analysis of risk factors for engagement in remaining gaps/need areas. Are there areas that USAID currently engages in that it should consider discontinuing and why?</p>	<p><b>FOURTH</b></p> <p>Strengths, Strategic Interests and comparative advantage –How do the remaining needs/gaps match up with the strategic interests or health sector strengths that USAID has in South Sudan?</p> <p>What areas should USAID continue to or newly engage in and why (highlight any specific success stories)?</p>

Based on this type of analysis the assessment will need to outline areas and recommendations for engagement, including a suggested timeline and priority order for each recommendation.

**Deliverables**

USAID/South Sudan Economic Growth (EG) team expects the following deliverables from the study team:

**a) Pre-Field Work Briefing and Report**

The team will present the inception report and approaches detailing the study design to USAID in an oral PowerPoint presentation and review meeting in which USAID and other parties involved in the study may raise questions and issues and request adjustments, if necessary, to that plan prior to the start of field work. This meeting will be held within 1 work day after the submission of the team’s inception report detailing the following:

- a) A summary of the key findings that emerged from the team’s review of existing documents organized to answer each study question. Bullet points of clearly identified gaps that the team will fill through field data collection and analysis.
- b) A detailed description of the study design, including:
  - a. Any suggestions from the study team about changes in the methodological approach proposed in the SOW.
  - b. A detailed description of the methodological approach and tools by study question proposed, and detailed data analysis plan – a detailed description of data analysis methods in relation to the study questions and the specific data collection methods.

- c. A draft work plan that includes the timeline for the study as well as scheduled field location visits and interviews is a required element of the detailed design.

The EG team will approve or request adjustments of the team's inception report.

#### **b) Post-Field Work Review**

This briefing and oral presentation/review will serve as a checkpoint on the completeness of the study data and analysis on each of the study questions and on the clarity of the flow of the team's presentation of its findings, conclusions and recommendations. The document required, may take the form of a set of PowerPoint slides, and should present team's findings on each question in bullet points to demonstrate how findings lead to the conclusions and recommendations it intends to present. This briefing will be held after field work and the bulk of its data analysis have been completed; but before drafting of study report commences. Any gaps identified at this review or gaps in the logic of the flow from findings to conclusions to recommendations will need to be addressed before drafting report.

#### **c) Draft Report**

The full draft of the study report will be prepared in accordance with USAID's How To Prepare and Evaluation Report guidance in Annex I of USAID's evaluation policy. The report will be based on USAID's evaluation report template.

#### **d) Debriefings**

The second debriefing with a wider audience that include, USAID team, development partner(s), government, and any other invited stakeholder(s). The Mission reserves the right to request the team to omit all findings of sensitive nature during presentations to wider audience. After the debriefing all quantitative and qualitative data set including debriefing slides will be transferred to USAID EG team.

#### **e) Final Report**

The study team is required to produce 2 versions of the report. The first report will be for the sole use of USAID mission. And the second version of the report will be shared with wider stakeholders: Implementing Partner(s), government of the Republic of South Sudan, and any other interested South Sudanese stakeholder. Any potential procurement- sensitive information will be omitted from the second version of the report before the report is submitted. The final study report is due in 5 working days after the study team receives USAID comments - see levels of effort.

The final version of the study report will be submitted to USAID electronically. And the report format is restricted to font 11 Garamond, but heading and sub-headings is required to be in Gill sans MT 12. Page limit for this study, excluding the Executive Summary and Annexes, be in the range of 27 - 30 pages.

### **Report Composition**

USAID requires that assessment and special studies reports are 27 – 30 pages maximum and arranged as follows:

1. **Executive Summary:** concisely state the most salient findings and recommendations (2 pages);
2. **Table of Content:** (1 page);
3. **Introduction:** Purpose, audience and Questions: (1 page);
4. **Background:** brief overview of the project, strategies, and activities (2 page);
5. **Methodology:** describe study methods, including detailed limitations, constraints and gaps (1 page);

6. **Findings/Conclusions/Recommendations (FCR):** organized FCR by questions, highlighting data quality, and reporting as bases for verification of spot checks, issues, and results as applicable (17–20 pages);
7. **Issues:** Provide list of key technical and/or administrative, if any (1 page),
8. **Lessons learnt and future directions:** (1 page);
9. **References:** (including bibliographical documentation, meetings. Interviews and focus group discussion);
10. **Annexes:** annexes that document the assessment SOW, tools, schedules, and interview lists, and list of tables/charts.

## ANNEX II – LEARNING AGENDA QUESTIONS

To inform the Mission Learning Agenda consistent with the Collaborating, Learning, and Adapting (CLA) approach that guides the USAID/South Sudan operational framework, this Assessment helps to address these questions by providing some partial answers and indicating where additional investigation is required.

USAID/South Sudan’s Learning Agenda includes the following questions:

1. What are culturally, socially, and environmentally adapted sources of community resiliency?
2. What factors linked to critical services are most closely related to community resilience?
3. What are the recovery strategies people have adopted that are helping them move away from dependency on humanitarian assistance to more self-reliance?
4. Have populations’ diets become more varied? Have they produced food which had otherwise/heretofore been unavailable, inaccessible?
5. What are the barriers to good nutrition even when there is access to food?
6. What are the DRR investments that have the most effectively mitigate the drivers of conflict?
7. What are the best DRR investments for USAID from a cost-effectiveness standpoint? Ex. Is it better to invest in roads, irrigations systems, agroforestry or grain silos, or all the above?

**Resilience and Recovery Strategies:** Analysis of USAID and other donor projects involving agriculture suggests a general trajectory of recovery strategies to help rural households move away from dependence on humanitarian assistance. The experience of the FARM project, the JSFP and GiZ and SNV projects as well as interviews indicate that the strength of local organizations, whether FBOs as in FARM project or otherwise, provides a cooperative socio-economic structure and sometimes assets in common which facilitates recovery from shocks. Often these community-level organizations are built upon existing traditional structures such as kinship, but regardless of origin they are typically a source of community cohesion that helps mitigate local level conflict. The CRS Director claims that these organizations enabled many households in the project to both escape fighting in Jonglei near Bor and then return and resume livelihood activities afterwards. The FAO has two intervention models: providing basic agricultural inputs such as food crop seeds, farming tools, fishing equipment, and veterinary supplies to rapidly “jump start” household production and providing cash or vouchers for purchasing food and other necessities to stimulate local markets. Both enable households and communities to recover more quickly and become more food secure.

**Nutrition:** The current alarming nutrition data from conflict affected areas in South Sudan, showing high levels of both global acute malnutrition and severe acute malnutrition<sup>12</sup>, highlights the fragility of the nutritional status and the imperative of an aggressive development and humanitarian response. Traditionally, reliance on different coping strategies increases in lean periods of reduced availability and access to food. The May 2015 WFP/FAO crop report indicated that the most widely and frequently adopted coping strategies in South Sudan involve changes in food intake, such as eating less preferred

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<sup>12</sup> UNICEF, South Sudan SitRep #59, 21 May 2015.

foods, eating fewer meals, and limiting portion size. Selling or consuming resources, such as animals and seed stocks, are typically the last resort.

Different donor interventions have provided seeds for dry season vegetable production, which had otherwise not been available, to help affected households broaden diets. Reports from Mercy Corps and others indicate that in some cases where vegetable seeds have been provided, women were found to be marketing the vegetables produced, rather than consuming them at home. This may be a lack of familiarity and knowledge of how to cook the vegetables or awareness of the nutritional benefit, indicating a need for nutrition education and food preparation in future programming.

Lack of knowledge on preparation of different varieties, particularly vegetables, was also found in the FARM Project. In general, the main constraint to improved nutrition, when a more varied diet is available, stems from inadequate nutritional understanding about the value of a varied diet, and unfamiliarity with vegetables that are being produced.

**Disaster Risk Reduction:** USAID has supported a range of disaster risk reduction (DRR) activities involving agriculture over many years in South Sudan, both through OFDA and FFP, and more recently in the conflict affected areas of Jonglei under the FFP-supported JFSP. Many activities have focused on supporting community organizations and DRR plans, through the participatory methodology of community managed disaster risk reduction (CMDRR) at the village or *boma* level. JFSP staff believed that savings groups provided ready cash for households affected by conflict and that building cattle watering ponds (*hafirs*) reduced tension between pastoralists moving into agricultural lands with their cattle. Also, support to develop community infrastructure such as boreholes with hand pumps or dikes to mitigate flooding which can survive conflict enables food production and security both before and after shocks. Similarly, the FAO reported promising indications of conflict mitigation from some of its DRR efforts to link and defuse tensions between IDPs and host communities through joint work projects such as road improvements.

In general DRR activities show a strong return on investment, as many are relatively low cost and, when effective, can lower future humanitarian assistance needs dramatically. While hard data is scarce, disaster-specific research suggests that preventive DRR activities produce significant savings in disaster response costs. A study by the U.K's Department for International Development (DFID) focusing on *The Economics of Early Response and Disaster Resilience* provides economic modeling indicating that the benefits of building resilience can significantly outweigh the costs.<sup>13</sup>

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<sup>13</sup> Cabot Venton, C., Fitzgibbon, C., Shitarek, T., Coulter, L., & Dooley O. (2012). *The Economics of Early Response and Disaster Resilience: Lessons from Kenya and Ethiopia*. London: U.K. Department of International Development. Retrieved from <https://www.dfid.gov.uk/Documents/publications1/Econ-Ear-Rec-Res-Full-Report%20.pdf>.

### **ANNEX III – TEAM COMPOSITION**

The Team Leader, Glenn Anders, had responsibility for work organization, work products, initial, interim and final briefings and vetting drafts and a final draft report. Resiliency Specialist Polly Byers collaborated with the Team Leader on the work planning and products with specific responsibility for political economy, conflict and resiliency. Senior Technical Specialists, Dr. James Thubo and Dr. James Odra had primary responsibility for advice and guidance, interviews and information gathering, and research and analyses related to agricultural development as well as culture and policy in South Sudan.

The staff of MSI/South Sudan led by COP Paul Temple supported the team’s work and interactions with USAID/South Sudan and the GORSS. MSI’s Thomas Johnson provided invaluable strategic and tactical guidance.

The team had approximately three weeks of work in South Sudan and the technical specialists had an additional two weeks to complete field work. The Team Leader had an additional few days in country to complete an outline and draft key sections of the report and another three weeks with the resiliency specialist and MSI in the U.S. to complete and vet the draft report.

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