COMPARATIVE STUDY OF ACTIVITIES AND MODALITIES FOR RESILIENCE BUILDING IN SOUTH SUDAN

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Acronyms

BRACED	Building Resilience and Adaptation to Climate Extremes and Disasters
FEED	Fortifying Equality and Economic Diversity
FFS	Farmer Field School
GAC	Global Affairs Canada
IDP	Internally Displaced Person
PIP	Program Implementation Plan
SP	Samaritan's Purse
WV	World Vision

Executive summary

South Sudan is a complex working environment, presenting unique challenges for development programming. This comparative study aimed to assess what lessons could be learned from the recently closed portfolio of projects seeking to strengthen resilience, with a focus on agriculture, food security and livelihoods. This report highlights learning in two categories: modalities of working and activities. A qualitative data collection process was undertaken in April of 2018, from which recommendations are made for future investment. While important lessons have been identified, data was only collected from the relatively stable (former) states of Northern Bahr el Ghazal, Western Bahr el Ghazal and Warrap, and thus cannot be generalized for the entire country.

Many entry-points for building resilience in areas of stability were successfully identified by the implementing partners and have had significant positive impacts. High-impact activities that are recommended to be scaled-up include the packaged support for dry season agriculture, expansion of traction plowing, and improved access to and management of fruit trees and hybrid poultry. These activities have increased agricultural production and income, enabling households to better withstand and overcome shocks. Dry season vegetable production in particular has reduced the 'hunger gap' (and in the long term may lessen the need for emergency assistance), introduced new sources of nutrition (and in the long term may reduce child malnutrition), and provided new assets and income for women that have also acted as a means to change gender norms. The farmer field school, input trade fair, and focus on women were ways of working that were effective and supported by communities.

There are important areas where programming and activities can be better. A set of recommendations are made to enhance the existing set of activities, including lessons regarding beneficiary selection, technology selection (best fit over best practice), liaising and aligning with government systems, coordination, flexibility in programming, timing, and pest management. In addition to improving what is done and how it is implemented, **there are activities that are recommended to be introduced for all projects**. These include: ensuring 'do no harm' programming reaches the community level, the use of theories of change to enable learning, introducing downward accountability mechanisms, involving men and boys in areas where their involvement is required (e.g. land, cattle, gender norms), taking a systems approach to ensure gaps are identified, and having a vision for transition / exit planning.

The Feminist International Assistance Policy was introduced during the funding cycle. Many of the lessons learned will be addressed by mandatory requirements of the new policy (e.g. assessment at baseline, sufficient expertise, on-going consultation, identify challenges and barriers as well as strategies to address them, involve women and girls in monitoring and evaluation). **Many of the recommendations provide mechanisms to meet these new requirements.** In addition to these changes, this comparative study provides reflections on the complexity of gendered work burdens, insight on the use of gender-based quotas in beneficiary selection, and the strategic involvement of men and boys.

Introduction

South Sudan is a complex working environment. During the most recent period of Global Affairs Canada-funded projects there was conflict and staff evacuations, political changes resulting in the creation of new states, changes to import policies, weakening of the currency and inflation, mass movements of internally displaced people and mass migrations to Sudan, amongst other unexpected, large-scale events. In addition to the expected challenges of variable rainfall, accessibility limitations during the rainy season and the low capacity and coverage of state actors, projects had to deal with rapid changes and high levels of uncertainty, which presents unique challenges for development programming.

The history of South Sudan plays a critical role for the development landscape. The country did not have a functional, centralized government in pre-colonial or colonial times. Furthermore, following independence in 1956, a series of civil wars prevented the most basic forms of government from developing or functioning. The Comprehensive Peace Agreement of 2005 set in motion state-building efforts, and with independence in 2011 significant pressure was placed on the emergent state structures. In many ways, the governance structures have only the appearance of a central state and federal structure, replicating what the processes, systems and institutions ought to look like, what Andrews, Pritchett and Woolcock (2017) argue results in a state that has conflated form with function without the necessary capability and capacity. While the projects funded by GAC are not focused on governance, their effectiveness and sustainability are significantly impacted by the state and governance challenges.

In order to better understand how to best operate in South Sudan, a comparative case study research effort was commissioned. The objective was to explore the activities and modalities across the portfolio of funded projects to assess what lessons could be learned regarding strengthening resilience, with a focus on agriculture, food security and livelihoods. This research effort was not designed to be about a specific implementing partner, nor was it an evaluation of specific projects. The objective was to identify lessons that have been learned about activities and modalities of programming in South Sudan across the portfolio of projects. As such, this report highlights the learning rather than the implementing partners.

Summary of methods and limitations

This report is based on a review of documentation for GAC-funded projects combined with a qualitative in-country data collection process. In April of 2018 the following sites were visited (in order visited): Kormalong (FEED, Oxfam), Magai (WV, FEED), Panthoi (Agriteam), Mayan Gumel (Agriteam), Waralel (Agriteam), Wungap (Agriteam), John Garang (WV, FEED), Titchok (WV, FEED), Ajoung (WV, FEED), Nyakrat (SP), Kunyuk (SP), and Matwic (SP). All of the sites are located in the relatively stable (former) states of Northern Bahr el Ghazal, Western Bahr el Ghazal and Warrap. In total twelve project sites were included, within which individual interviews and focus group discussions were held. The sites were selected based upon input from implementing organizations and selection criteria provided by the lead researcher. The full outline of the methods, with accompanying data collection tools, as well as the limitations and scope of the research is available as an Annex.

With regard to unexpected changes, unfortunately, one week before arrival to the project, a FEED project staff member died. This caused some delays in communication and therefore the planning process. Some staff went to Juba on an unplanned trip in relation to this death, resulting in some last-minute reshuffling and slight confusion about roles and responsibilities. All the areas were visited, but less time was spent in the Oxfam sites near to Wau. Due to the distance of Gok Machar (three-hour drive, one way), the team spent one long day visiting sites around Matwic, rather than two days (no accommodations were available near to the project sites requiring the team to return to Akuem each day). In addition to the contextualization meetings held with NGO personnel and experts before site visits, and validation meetings about the findings after the visits, the lead researcher was invited to present the initial findings to the Food Security and Livelihoods cluster in Juba, which was attended by approximately 65 people. The findings were positively received, and requests from other donor agencies were made about follow-up meetings.

What is working

Summary of recommendations

- In areas of stability, development activity seeking to build resilience is feasible. The previous portfolio demonstrates that amidst challenges, positive impacts are achievable.
- There is high potential to scale a packaged approach to dry season vegetable production.
- Traction agriculture has high potential to increase food production, however clarity is required on the modality of engaging with the promotion and distribution of plows.
- Fruit trees have high potential, but past projects experienced relatively low rates of survival. Future projects need to take into account the lessons about soils, environments and management for this activity to be successful.
- Poultry is a high potential female-controlled asset and means for income generation. Improved management and availability of treatment / vaccines are required.
- Prioritizing women is a viable means to have equity-based programming, but quotas need to be used strategically to ensure the inclusion of men and boys.
- Conflict management and peacebuilding should continue to be mainstreamed throughout all activities.

Packaged support for dry season agriculture

The combination of farmer field schools, demonstration plots, tools, seed, training and access to water enabled dry season agricultural production. The new yields, and newly introduced crops, were an effective entry point to address the challenges of the hunger / lean season, reducing the number of months of food shortage. The primarily female-owned vegetable produce increased household consumption, and in many cases was sold to markets – the exception being those communities far from roadsides or towns. Income obtained from the sales were used to purchase additional food when needed, pay for school fees and access medical treatment for family members and livestock. If additional income was saved through produce sales, livestock were acquired as a value-producing asset. The sources of food, and new sources of nutrients, in the long term has the potential to reduce childhood malnutrition and stunting, which tends to occur during these seasonal shortage periods.

> "We hear that there is hunger, but we do not know it"
> - Farmer Field School member

Farmer Field Schools (FFSs): FFSs were an effective way to bring together groups of people for the packaged support for dry season agriculture. Some projects envisioned these schools as operating as demonstration plots, from which individuals would return to their own plots for further planting. In most instances, this did not occur because not all of the components of the package were available in their home plots (particularly water access). Some projects envisioned that groups would collectively work, share and sell the produce from the FFSs; however, people preferred to have the group manage the FFS to share the labor of large tasks (e.g. building a fence) while plots within it were managed individually as not all people manage plots equally. As such, the FFSs typically operated as large areas, with individually managed plots within them. One of the challenges with FFSs is the location. While there are large amounts of unused land, there are scarce lands that have easy access to year-round water. In the projects that took advantage of existing water access (riverside or pondside), these were previously used and owned by someone. In some instances, the land was given freely for dry season use, in other instances it was bought, and in other instances it was gifted to the group for year-round use (but not formally). In all these cases, more attention is needed regarding land ownership and the potential for conflict over land (as these lands become more valuable – this relates to the deepening of 'do no harm' approaches outlined later in the report).

"We will continue [vegetable production] with or without NGO support."
- Female Farmer Field School member

Tools: The agricultural support tools that were provided to FFS members were basic (e.g. hoes, plastic watering cans, rakes, spades and wheel barrows; irrigation interventions and plows dealt with separately below) but were important additions. The watering cans in particular were valuable additions because they are not available in local markets for purchase, and because the water pumps do not provide sufficient water for everyone. As a result, the watering cans played an important role in ensuring sufficient water is available. The distance water is carried varies based on the type of water access (these are outlined in detail below). Some items were not sufficiently provided, such as plastic sheets, which FFS members were trained to use for improved harvesting and seed saving practices. These tools enabled agriculture to be done more efficiently (e.g. with hoes and spades) reduced labor burdens (e.g. wheel barrows) and acted as an enabler to broaden the impact of other activities (e.g. watering cans).

"We benefited from vegetable production. Many vegetables are grown now: eggplant, okra, khudra, onion, tomato. They are very good and very beneficial for us. When we take them to the market, we do not face challenges. When a child is sick, we buy medication. We pay school fees. We buy food. We buy school supplies. We started our own school [informal]."
- Chief

Seed: The provision of seed is an important addition to the package of activities supporting improved agriculture. The source of the seed varied by project; some imported via their own procurement while others purchased via local traders (which have local and imported seed, with imports largely coming from Sudan). For vegetable production, most of the varieties were newly introduced by the project, and for the main season crops the provision of seed enabled the expansion of planted land (due to ox plowing). Seed selection was primarily a product of availability combined with suitability (future projects could be more deliberate regarding seed selection for drought tolerance or other traits sought after by farmers as well as aligning nutritional deficiencies with choices). The primary challenge was timing. Seed that is late limits the impact or may be unusable if the planting period has past. The exact date of timing is not uniform across the region, as planting depends on when flooding recedes (varies due to elevation) and when rainfall begins. The preparation of land depends on how much land farmers expect to plant (meaning clear and advance communication is critical). Most projects provided seed directly to farmers in communities. One project used an input trade fair model (farmers given vouchers and sellers gathered at a particular location, who were paid by the organization). Farmers preferred this method as it gave them more agency in deciding the type and quality of seed. However, when distances are too far or when locations are not safe (including theft), the input trade fair model becomes less attractive and direct distribution recommended. Context-specific approaches are required in order to determine the most appropriate seed provision approach. If input trade fairs rely on local suppliers, seed quality testing is important as less quality assurance may be available in contrast to bulk buying.

> "We did not know what was behind the seeds. We used to suffer because of poor food and now we do not suffer."
> - Female Farmer Field School member

Dry season agricultural training: In most instances, training provided at the FFSs was reported as being understandable and practical. There were a few instances where training was more theoretical than practical, which hindered learning. However, for the most part, and in all the projects, the modality of training was practical and utilized locally available materials and/or materials provided by the project (the only exception was for seed saving and harvesting, it was reported that they were trained to use plastic sheeting in both process, but did not have / were not given plastic sheeting). All projects organized training using effective adult learning modalities that were practical and oriented toward learning-by-doing approaches. For the activities related to dry season agriculture, the training was comprehensive and sufficient.

Water: Many of the projects selected sites where water was accessible to support dry season agriculture, such as those beside rivers or natural / constructed ponds. If future investments aim to scale this activity, more engagement with water will become increasingly important. The lack of access to water in some communities within the portfolio demonstrated how the benefits of dry season agriculture were limited when water access is limited. The projects also

demonstrated that one approach to improving water access will not work in all places – emphasizing that best fit over best practice is important (such as the mass provision of treadle pumps). A detailed sub-section about irrigation is included at the end of this section (p. 12-15).

Traction agriculture

A typical household prepared 0.5 to 1 fedan (1.038 acre) of land by hand, which is a labor intensive process. The introduction of ox plows enabled the amount of land plowed to increase to 4 to 6 fedan, and farmers reported that the yield from this approach was higher per fedan. As a result, the introduction of traction agriculture has the potential to significantly improve food production. It is noteworthy that in northern communities (near to the Sudan border), donkey plows were locally constructed and used – these plows required one animal and were easier to handle. For the majority of the region ox plows were preferred. The was likely due to the availability of cattle, the relatively low availability and high price of donkey, combined with improved efficiency of ox plows and the novelty of having newly introduced machinery.

In highlighting traction agriculture as having high impact potential, there were a number of challenges. Most communities have more than 100 households, while the ox plow distribution was limited to a few. In some instances, the FFS groups shared the ox plows – this, however, was not by design for all projects, as in some instances ox plows were given as appreciation to community facilitators / lead farmers. The plowing period for main season agriculture occurs within a two-week window, so the time for ox plow use is limited. FFS groups that shared ox plows used a rotation system (half day per person), which did not allow them to plow the 4 to 6 fedan that was possible (instead plowing 1 or 2 fedan). In other communities, ox plows were individually owned (as was the project design). In these instances, tension emerged not as a result of initial beneficiary selection, but following the emergence of the benefits of ox plows. Some community members began to wonder why they too were not included in the ox plow activities (even if they were involved in the initial beneficiary selection process).

There is ample unused land but not all that land is of equal quality. As ox plow provision has been relatively limited to-date, it remains to be seen how much of the unused land is equally suitable for main season production (e.g. soil quality, flooding). It is also worth noting that the metal ox plows (~US$ 120 each) are not available in many local markets, and thus even those with some assets (e.g. cattle) are unable to purchase these items. This made the provision of ox plows an even higher value asset. When distributing high value assets such as ox plows, attention to beneficiary selection, on-going communication and transparency, resource management and conflict management are critical. Main season crops tend to be male controlled assets, while in many projects ox plows were distributed to women (e.g. lead farmers). Project activities that have high quotas for female beneficiaries, including ox plow distributions, need to consider the ways in which men are involved in the use of those assets (e.g. as owners of land for vegetable production, as owners of cattle for ox plowing). Recognizing the gendered nature of asset ownership will enable strategic inclusion of men within programming that aims to primarily target women (strategic use of quotas is outlined in more detail in the reflections on gender below).

Fruit trees

There is a high potential to expand the species of fruit trees grown in the northwestern regions of South Sudan, many of which grow well and can be sources of nutrition and income beyond dry/main season agriculture cycles and livestock. While this potential exists, all the projects experienced challenges with fruit trees, and these lessons should inform future activities. The common modality for fruit tree provision was to purchase and distribute saplings (usually for FFS group members) and provide some training, often at FFSs. In these projects, a significant degree of loss occurred after distribution. The reasons varied, but include: inappropriate management, insufficient water, flooding, consumed by livestock, and not being adapted to the soils or environment. When providing assets to the most vulnerable, a distribution modality is appropriate, however explorations might also be made to involve the private sector so that tree saplings are more readily available for purchase, as seed currently is.

One of the projects took a different approach. It operated its own fruit tree nurseries. This project also faced challenges, as the first order of imported seed was delayed due to import policy changes, exposing the seeds to heat stress while in transit and storage, and as a result a high percentage failed to germinate. The failure may have also been due to environmental and soil issues, as the seeds were imported and not locally sourced. In addressing this challenge, the project sought to acquire local seed and established a second nursey. Some of the saplings were lost, however that loss was kept within the nursey site and the project was able to distribute the saplings that were doing well. The distribution of the saplings of the second round had a high survival rate. This is suggestive of the importance of the environmental factors when selecting seed and/or saplings for distribution, and that if projects are able to manage a nursery, then beneficiaries can be given higher quality saplings.

Tree nursey (Photo courtesy of Samaritan's Purse)

In future projects, in addition to ensuring higher quality of seed and saplings, projects must ensure that sufficient training is provided. Like the vegetables, many of the species were newly introduced. However, unlike the vegetables, less training was provided on management (planting preparation, transplanting, soil types, watering requirements, protection from livestock and other animals, et cetera). A one-time training does not appear to be sufficient; pre-distribution, distribution and post-distribution training and follow-up will help ensure higher survival rates.

Poultry

Poultry was engaged with in different ways in the project portfolio: one project used traditional poultry (and other small livestock) as an asset that was distributed to the most vulnerable, while another introduced poultry and engaged in hybrid poultry breeding. The former was not thoroughly investigated in this research process, however these livestock tend to be female controlled assets and can be a means through which the most vulnerable are supported, and through which they may gain new sources of income (e.g. sale of eggs). The hybrid poultry breeding was done through a livestock farmer field school. The activity has high potential, but encountered challenges. The high potential is because hybrid egg production is higher in volume, the eggs are larger in size (approximately double the sale price) and the bird itself is larger (approximately double the sale price). Most losses occurred in the first generation of hybrid breeding, when individuals encountered a range of challenges, which included: the introduced poultry had different heat stress tolerance, different feeding requirements, and different experience with predators. Due to these management issues, losses occurred in the first generation. However, those that reached the third generation were doing well, and farmers had acquired new sources of nutrition for the household as well as new sources of income through the sale of eggs. Newly introduced birds were often cared for as if they were traditional ones; the management challenges might be addressed through more training (pre- and post-distribution). In general, poultry vaccines and treatment were not available. Future projects may look to the broader environment affecting livestock health to ensure that the vaccines and treatments required to manage disease are available.

Focus on women

> "It is a good thing here [quotas], but backfires there [changing social norms]"
> - National NGO staff member

The explicit focus on women, including the use of quotas for beneficiary selection, had a positive impact on the broader challenges women face. Dry season agriculture in particular, by introducing new forms of income and assets, enabled women to provide for the needs of their families without depending upon their partners. This reduced tensions in the household, and women report being "more free" – meaning to go to the market, make decisions about asset

and income use, and experienced less violence in the household. This is an important, positive change. However, focusing upon women within beneficiary selection and utilizing a mainstreaming approach to gender (which was widely utilized), meant that not as many men and boys were involved or interacting with many of the project activities. The result was that in the sphere of attitudes and behaviors of men and boys, limited change was reported – such as in work burdens, violence outside the household, and socio-cultural norms and expectations. In line with the Feminist International Assistance Policy, and in line with equity-based programming, having quotas for high levels of female participation (60-80%) in certain activities is recommended for continuation. However, quotas should be used strategically, and not generalized for all activities. If there are community conversations about gender-based violence, for example, these ought not be mainstreamed with existing project beneficiaries, but include a broader set of the community, and specifically include men and boys. Additional comments are made about the focus on women in the section 'reflections on gender' below.

Conflict management mainstreaming / integration

Conflict management training and capacity building was mainstreamed into many project activities. Based on the experience of the projects, the mainstreaming / integration approach works more effectively than small, stand-alone conflict management activities. Community members reported learning about conflict management (particularly for conflict resolution within their FFS group) and appreciated the training. Knowledge, attitudes and practices, as well as policies, laws, and enforcement are slow to change, particularly in South Sudan where there is a low level of formal government presence and a high reliance upon informal systems. While linkages to other services are important, in order to effect change these other services need to be accessible, appropriate and functional. For most of the rural areas, this was not the case. A transformative change in conflict management requires change within and beyond the community-level. Given the importance of preventing tensions from arising, and alleviating them if they arise, it is recommended that conflict management continue to be mainstreamed within all project activities. As outlined elsewhere in this report, 'do no harm' programming is critical in design, implementation, close-out and planning for sustainable change, for which conflict management mainstreaming plays a contributing role.

> "We need support for peace. Our vulnerability is because of conflict."
> - Community member

Water access in detail

In communities where water is not readily available, the impacts of dry season agricultural activities were greatly restricted. While most communities were selected because of their access to water resources, some sites did not have such access – because of which dry season agriculture (and the benefits it offered) were limited. Rather than using pumps or canals, individuals had to dig as deep as 5 or 6 meters, taking out water in containers, one at a time (see image to right).

Hand-dug shallow well, low water table

For those projects that did not include components related to water or irrigation, many took advantage of unrelated developments, such as the construction of roads that required large amounts of soil, the removal of which created a series of human-made ponds. These acted as sources of water to support dry season agriculture, as did rivers. Where the ponds and rivers did not exist, some of the projects attempted to address the challenge of limited access to water by providing treadle pumps. The treadle pumps, however, do not work in all areas (e.g. the hoses not long enough and at or beyond the maximum suction distance, and thus not used). As learned in many activities, a standardized approach does not often work in all locations, requiring context-specific information as well as community-based mechanisms to ensure that activities are appropriate and suitable. One project implemented different types of irrigation approaches, based on the opportunities and constraints in each project site, allowing for learning on the benefits and drawbacks of each.

Lessons from irrigation are summarized on the pages that follow.

Hand-dug shallow well

Shallow wells: Traditionally dug by hand in areas where the water table is relatively high, the shallow wells provide access to water throughout the year. In some locations these are used for livestock and human consumption (where boreholes are not available). Projects used these shallow wells as water sources for dry season agriculture, with treadle pumps and watering cans. While relatively labor and time efficient, the water provided is limited and thus covers a limited area for irrigation.

Treadle pumps: Multiple projects provided treadle pumps to communities, which were imported from Uganda or Kenya. Using 50-meter hoses, water access was greatly expanded and reduced burdens of carrying water in cans. Water provision was usually not sufficient (even with multiple treadle pumps) to water all plots for all FFS members (some members used watering cans) meaning that management systems were required for effective use. The primary challenge was maintenance. Treadle pumps are not constructed in South Sudan and spare parts are not available in the market. Approximately a third of treadle pumps seen were no longer functional due to broken parts – this does not mean treadle pumps do not work, but that the broader system needs to be considered in greater detail to ensure sustainability. Treadle pumps do not work in all contexts, such as when the water table is very deep (some communities received treadle pumps but were unable to use them). Rather than cost-effectiveness or best practice, best-fit based on local context should drive decision making regarding appropriate irrigation technologies.

Hand dug well in dry river bed with treadle pump

Multi-purpose ponds: There are multiple potential uses of large ponds (fish, livestock, irrigation). The focus in the projects was irrigation, with water access for livestock being a secondary benefit. The use as fish ponds is a possibility in the future. The construction of these ponds is labor intensive, and does not work when the water table is very high (as this presents challenges for digging to the required depth as water seeps up). The ponds have been successfully used in combination with solar pump systems (described below) as a means to provide water to a relatively large area with low labor burdens. These are essentially purpose-built ponds, in contrast to the ponds made by road construction activities.

Multi-purpose pond

"We share the water with everyone. Whoever comes, it is enough. We also gave land for others to use for vegetables."
FFS member on pond

River-sourced water

Rivers and ponds: Some communities had access to natural (rivers) and artificial (ponds created when large amounts of soil was removed for road construction around 2009) sources of water. Access to these water sources is limited and uneven. Projects without irrigation components focused upon those areas with existing access to water. The opportunities of existing water sources may continue to be capitalized upon as many opportunities of this nature continue to exist. However, if projects are scaled there will be a need to more explicitly engage with irrigation, as it a key enabler for dry season agriculture. As shown above, there were some communities within the portfolio that struggled with access to water, even though the community selection sought out those with water sources. It is worth noting that the ponds created from road construction were not purposely built, and the extent of back-fill is unclear, and thus the viability of these ponds over the long term.

Rope pumps: Functional when the water table is relatively high (~20 feet or higher), this simple technology is easy to use and construct. One project trained local craftspeople to construct the rope pump system, who were connected with communities to address any repair issues. Hoses (50m) can be attached to support irrigation in a nearby radius. A primary challenge is that while simple, some of the parts can be challenging to acquire in local markets (such as high-quality ropes, as locally-made ones quickly wear due to frequent use in this system). Some pumps were not functional due to a lack of suitable ropes at the time of visit. A secondary challenge is that some viewed the rope pump as similar to a borehole, and used it for drinking water, but the water is often contaminated and a source of water-borne diseases. In many instances, communities do not have access to suitable drinking water, and they thus use whatever sources are available to them (with the recognition that these water sources are a source of disease, but without alternatives). This technology appears to be relatively new to the region, and as a low-cost technology might be explored as an option for scaling FFSs.

Rope pump

Solar pump, Photo courtesy of Agriteam

Solar pumps: Drawing upon an existing water source (river, shallow well, pond), a solar pump system can be used to irrigate large areas of land, and significantly reduce the labor burdens associated with other forms of accessing water. Where they were provided, solar pumps were greatly appreciated for their ease of use and relative ease of ability to relocate (to cover a larger area, in comparison to stationary systems). One challenge was that the solar panel is a high value item, and there was one report of theft (that panel was recovered and three individuals jailed). In addition, proper management systems were needed to ensure funds were pooled for repair and upkeep. Access to use the solar pump, as with other technologies, had to be carefully managed to ensure equitable access.

Micro-irrigation with generator pumps: In some sites, a generator (diesel) brought a large volume of water from a river or pond into a series of constructed irrigation canals. Small dykes were used to manage the flow of water to different fields. A significant amount of labor was required to construct the canals, and technical support was required to ensure the gravity-flow system moves water throughout the canals. A large water source is required for this system. This approach allows much more land to be irrigated than the solar pump and treadle pump systems (which are limited by hose length), as a network of canals can be used. This has the potential to improve main season agriculture as well as dry season agriculture, however the use in past projects was limited primarily to vegetable production. For dry season agriculture, some communities created micro-ponds, which they used the generator to fill, and then used watering cans to water their plots. This reduced the amount of fuel required, but also the amount of land covered. Water, generator and canal management are critical. This includes ensuring monies are collected for fuel costs and repairs, as well as instituting effective water management systems and engaging in canal maintenance.

Water canals

Activities to adjust or re-prioritize

In some areas, communal storage sites were constructed at the community level, as a place to store yields. These did not appear to be widely used. There were reports of theft and damage, but more importantly people preferred to store their yields in their own storage units or within their homes. An alternative might be a collective buying and selling mechanism, operating more like a cooperative, or a modality similar to WFP's Purchase for Progress program – the difference being that individuals sell their yield, rather than simply store it, within these institutions. Collective storage was stopped mid-project in some instances when challenges as well as a low level of interest emerged.

Formal financial services were largely absent throughout the project areas visited. Linking farmers to formal services is not feasible for the vast majority at this time. For those projects that planned to engage in financial services, reported uptake was low and based on this research farmer interest was minimal. There are, however, informal systems of rotational savings schemes. These typically operate as a group of ten people. At least one community reported be trained on how to improve the management of these systems, which they felt improved their savings group. If financial services are pursued in future programming, the objectives need to be aligned with the available possibilities and accessibility of institutions, which in most cases means developing and/or supporting informal savings groups as formal financial services are largely limited to towns. As a first entry-point, this might include supporting the establishment of saving schemes and strengthening the management of them. A second entry-point, where savings models can have greater impact, is supporting the transition of these schemes from a rotational system into a service-providing entity, building financial literacy and providing options for borrowing.

Marketplaces were constructed within one of the projects. These were not active at the time of the site visit and therefore not visited. The rationale was to provide a facility for traders and buyers to interact in a formal environment. Based on field staff experience, this activity might be of lower priority moving forward, in comparison to other higher impact interventions. A few projects engaged in supporting fisheries. When fishers were asked what they would prioritize in their communities, fishing was not ranked at their first priority – rather, it was dry season agriculture and traction agriculture. While fishing does have potential in parts of South Sudan, there were a range of challenges encountered and this activity might be de-prioritized in relation to other, higher impact activities.

Activities not sufficiently assessed to present learning

Conditional and unconditional cash transfer programs were used in response to an influx of internally displaced persons in one project area. The activity was short-term in nature, and was in response to unplanned shifts rather than a planned activity. While this shows how projects have acted in an adaptive manner, beneficiaries of this activity were not included in this learning research.

The projects planned to engage in non-farm and off-farm income generating activities. Some of these activities have been reported on by the implementing partners, but were not included in this research. For the most part, the non-farm and off-farm income generating activities were small in nature and time-bound. There has been limited tracking regarding what opportunities trainees have engaged in post-training, and tracing these individuals was beyond the scope of what could be included in this learning research. The income generating activities included bee keeping, fishing exchange site visits, fishing value addition activities, and groundnut shelling machines. It also included training provided in Yei as well as some components of locally-provided capacity building training for agricultural extension workers.

School and community gardens, along with school clubs, were undertaken by some projects. In some instances, community gardens overlapped with farmer field schools or demonstration plots, which have already been addressed earlier in this report. In the twelve project sites visited in this initiative, no school gardens or school clubs were encountered. Most (primary) schools were operating quasi-informally, often under a tree with limited material supports. The few communities that had formal school buildings were not engaging in school gardens or school clubs. If projects view schools as a vital entry point for skills building and education (e.g. nutrition), it might be better to engage with state level authorities regarding curricula and coordinate with actors focused explicitly on the education sector, until educational facilities become more available in the project areas. In most rural areas, these activities do not appear to have been widely implemented, largely due to the low level of accessibility of formal education. It is noteworthy that many mothers requested schools for their community, reporting that children often enter school very late because of the long distances that must be walked to and from formal schools.

What we can do better

Summary of recommendations

- Data is sparse in South Sudan. Evidence-based decision making requires that more time and resources be invested in data collection and operational research.
- Beneficiary selection can be improved from design to implementation and exit planning. This is essential for identifying and reducing tensions that emerge.
- Best fit (over best practice) requires a combination of technical expertise with community-based decision making. It also requires agreements that allow for flexibility of adjusting to best fit approaches.
- Timing is impacted by factors beyond projects (e.g. seed distribution). Due to its importance, it should be prioritized in the planning stage to avoid delays.
- Resilience building requires longer time frames.
- Pest management is a critical challenge, particularly in dry season vegetable production. Local experimentation and innovation needs to be shared widely.
- Working with government systems is becoming increasingly important, particularly at sub-state levels. Where and when appropriate, opportunities to strengthen these systems should be explored.
- Coordination remains a challenge. As a starting point, GAC should ensure that its portfolio is coordinated and has regular meetings.
- Due to the complexities and uncertainty of working in South Sudan, flexibility in agreements is critical. GAC has success with pre-approved crisis modifiers, which are recommended as a modality for continued use.

This section outlines activities and modalities being done, and focuses upon areas where these might be done more effectively. A number of the points outlined below have been alluded to already, or are specific points related to project activities or modalities of working. The following areas were identified as key:

Data for evidence-based decision making: One of the projects utilized a university partnership to add depth to the organizational thinking about resilience. This research was finalized too late to have impacted the program (e.g. metrics for assessment), but if made available to future projects can impact future programming. Generally speaking, the data required to support project planning is absent. When data is available, it is not consistent – due to a host of factors, including variable accessibility, poor methods, timing of data collection, inclusion criteria, and representativeness, to name but a few. Given the scarcity of information in South Sudan, there is a need for more operational research to gather data to support evidence-based decision making. Examples of the importance of this include the failure of seed germination as well as low survival rates of tree saplings and seed introductions due to soil types as well as the location-specific nature of what constitutes ‘good’ rain (in high water table areas ‘good’ rain

might result in devastating flooding, while in another that same level of rain ensures crops survival).

An example, within the GAC portfolio, from projects working in the same area (Bahr el Ghazal) and with the same ethnic group (Dinka), there were very different narratives that informed project design. For example, there was data that agriculture was primarily a male activity, with more than two-thirds of reported farmers being men, whereas in another report agriculture was primarily a female activity, both in practice and as those who were members of FFSs.[1] One of the key issues was that these reports did not inquire into crop-specific or task-specific activities, which contributed to the discrepancy of findings.[2] In another instance, it was reported that women had low participation rates for agricultural extension services, while another report said that a large majority of people engaging with agricultural extension services were women.

> "All of us are learning. This is a very crucial activity for us."
> - NGO staff member (reflecting on learning research)

The framing of problems is important because these understandings shape how programs are designed, who are targeted for activities and how they are implemented, which affect the outcomes and impact. Having detailed, context-specific information can significantly improve design and implementation, and enable better outcomes and impact. This is not a challenge specific to GAC and its portfolio. There are 45 indicators (up until 2018) without data for the UNDP Human Development Reports for South Sudan.[3] However, recognizing the dearth of information means that time and resources are required to address these gaps, and it may also require adjustments to funding modalities, as potential implementing partner organizations may need funding to conduct thorough assessments before finalizing the activities within the proposal and outlining the implementation plan. Examples of this include assessing water table depth (as one project in the portfolio did) to understanding the soil types and suitable approaches for sustainable agricultural practices that take into account the laterite soils of Bahr el Ghazal, mineral and organic matter contents, water holding capacity and other specifics (Samson, 2011: 13-14), which will guide appropriate and effective climate smart agriculture.

[1] The specific figures are left out to avoid specifying one organization or project. This example is meant to signify the challenges of data with a concrete example, not to draw attention to one organization or project.
[2] While there are great variations in traditional Dinka culture, in Warrap it is common that maize and sorghum are male crops and livestock and the clearing and plowing of land are male responsibilities, whereas groundnut, vegetables and sesame are female crops and the weeding, milking and decobbing are female responsibilities.
[3] Available data for HDR indicators: Demography 9/9, Environmental Sustainability 2/6, Mobility and Communication 3/5, Trade and Financial Flows 4/7, Human Security 7/9, Work, Employment and Vulnerability 2/11, Poverty 7/8, Gender 11/23, Inequality 7/12, Income/Consumption of Resource 5/8, Education 8/12, Health 12/12. Total 77/122 (63%).

Beneficiary selection: In some instances, beneficiary selection encountered a tension between selecting the most vulnerable versus selecting those most suitable for an activity. An example of this was ox plow distribution, wherein one project had criteria for beneficiary selection based on vulnerability, but when asked to bring cattle for training and plow distribution, were unable to do so (hence their vulnerability). This was a design related factor of beneficiary selection that could have been improved upon. A second challenge with beneficiary selection was that not all members of a community are included, for example in the FFSs or those vulnerable members of society given small livestock. This created tensions in communities. During the initial meeting with implementing partners, the criteria for beneficiary selection were explained. For example, the FSS group members were present when the lead farmers / facilitators were selected, and agreed to that selection, but when the benefits of high-value items like ox plows and solar pumps manifested themselves after one or two years, these tensions re-emerged as questions about why only certain people gained access to these items. One of the mechanisms to address this is to ensure that beneficiary selection is not a one-time event, but a process of on-going communication and transparency. As a first entry-point, when project staff visit sites and hold community meetings, they could take stock of potential tensions and explain the project processes as a reminder, while also opening a space for other community members to express their grievances. This process may also highlight new directions for the project that may need to be taken in response to emergent tensions. Additional modalities to recognize and address these tensions are outlined in the following section 'what we need to do'.

Best fit (over best practice): Not all tools, technologies and inputs work the same in all locations. As highlighted above, in the northern border areas, donkey plows were in greater demand than ox plows. The treadle pump does not work at all water depths, nor does the multi-purpose pond. Ensuring best fit takes place is not only a matter of having community-driven decision making, but this is an important component. One of the projects conducted an assessment of water table levels throughout the project areas, and brought in technical expertise on the engineering components related to irrigation systems and suitability, alongside community-based needs assessments and feedback. This combination is a good practice in seeking to identify best fit. From the past portfolio, there were multiple examples of when best practice is generalized, which ended up not being suitable, appropriate or feasible in certain sites. Not all of the required information will be available at the time of proposal submission, and as such having the space within implementation to adjust to these changes is important (e.g. approving a set of activities as opposed to pre-determining one activity). Some donors have a period following approval (e.g. 6 months) when the PIP is refined and finalized, based upon more thorough needs assessments. GAC might consider approving a set of activities (e.g. 3 to 6 different irrigation approaches), and the communities are then able to determine the best fit from these pre-approved project activities (without specifying a set number of each type). Finding a modality that works best within the GAC processes as well as those of the implementing partners will likely require on-going learning and experimentation.

Timing: Timing is critical in South Sudan. If cattle are required for ox plow training, people need to know this before the cattle move on their seasonal migrations. This might mean communicating these activities up to six months in advance. The provision of seed (and

information about a forthcoming provision) is required at specific times for the main season agriculture because the right amount of land needs to be prepared in advance of the planting period. Late seed for dry season agricultural production results in lost production potential. All of the projects struggled with the challenge of timing, and many of the factors were beyond project control, such as import delays, import policy changes, transportation delays, insecurity, and limited accessibility. Other factors were related to the nature of the project cycle – with projects being approved around April, the first main season of agriculture was missed. One way this can be better managed is ensuring communication from implementing organizations to community members is improved and done well in advance. Given the complexity of working in South Sudan, the timing challenges are likely to continue. However, recognizing timing as having significant impacts on the outcomes may ensure that communication, supply, supply chain and distribution components are prioritized.

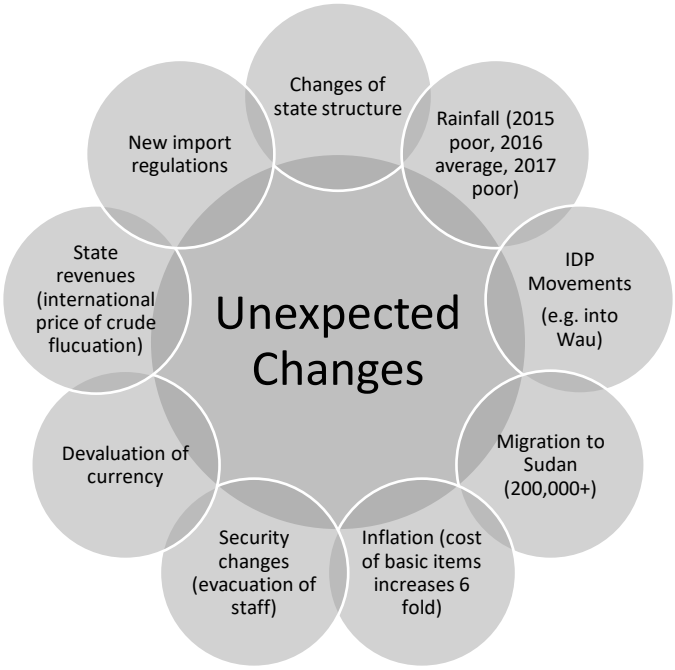
Another way the timing issue can be improved is by extending the project duration – even if the past cycle was 2 to 3 years in duration, most projects were only able to engage in one full agricultural season (meaning once a supply chain is established, projects are preparing for close out). At the time when this past round of funding was initiated, South Sudan had only recently emerged from the 2013 conflict. Given this situation and uncertainty, having a limited time commitment for projects was prudent. While conflict continues in some regions (and where humanitarian funding will continue to play a role), there are regions of stability wherein development activity can occur. In order to build resilience, it is recommended that these regions of stability be worked in, and that the duration of project funding be extended.

> "It is not possible to build resilience in one agricultural season."
> - NGO staff member

Flexibility in proposals and project implementation plans (PIPs): In addition to the typical challenges of the operational environment (accessibility, instability, pest, disease, flooding, drought, staff turnover, limited capacity) during the project cycle a range of unexpected or unknowable factor emerged that impacted the ability for projects to implement (see figure below). This requires nimbleness and flexibility on the part of the implementing organization, the donor, the partnership agreement, the modalities of working, and the activities being implemented. While there are challenges in all humanitarian and development contexts, this is particularly the case for South Sudan, where additional flexibility, responsiveness and adaptability are necessary.

> "Management must be ready to change gears at any time"
> - Project Manager

All of the projects displayed degrees of responsiveness and adaptability. For example, one project introduced a new irrigation type after doing technical assessments and introduced poultry after doing a needs assessment and saw this as a key opportunity to reach female beneficiaries. Another project introduced a conditional cash transfer program in order to manage an emergent IDP population. A third project modified their plan to better integrate gender, adding team capacity and activities to their implementation work. The most viable mechanism most NGOs speak about, with regard to the GAC working environment, is having pre-approved crisis modifiers within the proposal, contract and PIP, so that implementing partners are able to quickly address emergent needs and unexpected changes. Given that this approach has been approved within the GAC portfolio, crisis modifiers are recommended for future project proposals and PIPs.



Examples of unexpected changes during 2015-2018 period

Coordination: One of the sites selected by a project had to be adjusted because another international NGO had already committed funding to do a similar activity there. While this does not appear to be common, as the presence of international NGOs in the rural and remote areas remains limited, there was a greater need for coordination. Coordination with all actors remains a challenge, despite progress made in the various clusters. Opportunities for coordination, in addition to the existing clusters, is the emerging Resilience Exchange Network as well as coordination around the emerging framework being developed by USAID and UNDP. First and foremost, coordination should be improved within the GAC portfolio itself. Norad and USAID provide viable examples where implementing partners, based on sector, meet on a regular basis. These meetings enable coordination, communication and sharing of lessons learned.

An example of a topic around which one of these meetings might be is on pest management. Pest and disease was one of the greatest challenges for dry season agriculture, and as a result

some FFSs reduced the number of vegetable crops down to one or two, which were most resistant. All communities experimented with local innovations on how to manage pest and disease. For example, mixing water with neem leaves, others adding different quantities of soap, and yet others trying fermented cattle urine. In at least one community, pest and disease was successfully being managed with a mixture of neem and soap water, applied every third day. This may not work in all places, however there was a need to share this learning across the project sites, and to learn from other projects that experimented and innovated with solutions to address pest and disease, particularly for dry season vegetable production. In the one case when an FFS was abandoned, one of the main reasons that was given by community members was the inability to overcome pest and disease. Thus, this has strong implications for long-term sustainability (pest and disease being one of the factors negatively affecting sustainability).

> "We have just given up because of pest and disease."
> - Farmer Field School member

Working with government systems: Projects did work with state and sub-state administrations for the selection of project areas, and payam administrators were involved with most projects at the community level. Where agricultural extension workers were present they were included in the projects, and some projects offered extension workers additional training. In the future, where and when appropriate, future opportunities of this nature should continue to be explored. There are challenges working with the Government of South Sudan, however there are modalities that might be explored to enhance the capacity of state actors, such as the agricultural and livestock extension system. As the permanent actor, the government agencies should be included in project activities. Modalities of doing so, in recognition of the challenges of this relationship, might include alignment of training content (or strengthening government content where appropriate), staff secondment to build capacity (as done by FAO) and improve systems and/or coverage as well as holding regular update meetings with county and state officials (e.g. Ministry of Agriculture). Some organizations are utilizing these modalities at the federal level. There appear to be opportunities to do so at state and sub-state levels as well. As funding and actors shift from humanitarian and emergency programming into development activity, there will be a need to shift the modalities of working. Having parallel systems in emergency contexts is often required, however in stable, developmental contexts there is a need to work with governmental systems. This means ensuring the systems are aligned (such as ensuring messaging from implementing agencies and governmental actors reinforce and support each other, rather than contradict – this is explored in greater detail below on the section on alignment) and building the capacity of national actors.

What we need to do

Summary of recommendations

- Do no harm capacity needs to be strengthened at community levels.
- Theories of change should be utilized to enable organizational learning.
- Systems approaches can identify programmatic 'blindspots'.
- Downward accountability can improve effectiveness and support do no harm programming.
- Activities should align with existing systems to ensure consistent and cohesive messaging (in agriculture or health extension).
- Agricultural seasonality greatly influences impact, programming should take into account seasonality within financial and annual schedules.
- Resilience programming requires a shift in metrics, monitoring and evaluation, emerging approaches can be utilized to enable these changes.
- As programming shifts from emergency response toward development activity, there will be an increasing need to build capacity of national actors.
- A vision for transition will support sustainability of programming.

This section includes activities that were not being done within the portfolio, but are suggested as activities and modalities for consideration.

Do No Harm Approaches

The projects were adopting 'do no harm' approaches, however this did not sufficiently manifest itself at the community level. The project activities can, and have, created new sources of conflict. For example, projects have provided items of high value and use (e.g. ox plows and access to water) but not all people in the community equally gained access to them. In one of the project sites, a woman damaged a fence around the FFS in protest regarding this lack of equal opportunity (see image below). In this instance, it was not the program design that fostered conflict (as the community selected the participants to receive the benefits) but as the project was implemented perceptions changed after the impact of these introductions were evident. Many people in the community were angry that 'some people got these things in our names [the community] and only they get the benefit from it.'

For the portfolio of projects, the point at which 'do no harm' needs to be strengthened is the community-based, non-project staff people – the community facilitator, lead farmer, lead woman. These individuals are volunteers, often given some form of incentive for their contributions, but are not involved in organizational training related to 'do no harm' programming. Ensuring that 'do no harm' approaches inform activities from design to handover is critical, particularly in communities where levels of violent conflict are relatively

high and where mechanisms for peaceful conflict resolution are weak. Given the historical context of conflict, there is a high potential that tensions can foster violence. For 'do no harm' approaches to work more effectively, there needs to be deeper organizational learning and capacity building, particularly at the local level. Projects can also institute processes to ensure that 'do no harm' approaches are working effectively, such as having community-based monitoring and reporting systems, which could be aligned with the Feminist International Assistance Guideline regarding having on-going consultations with women and girls.

Fence damaged at project site in protest

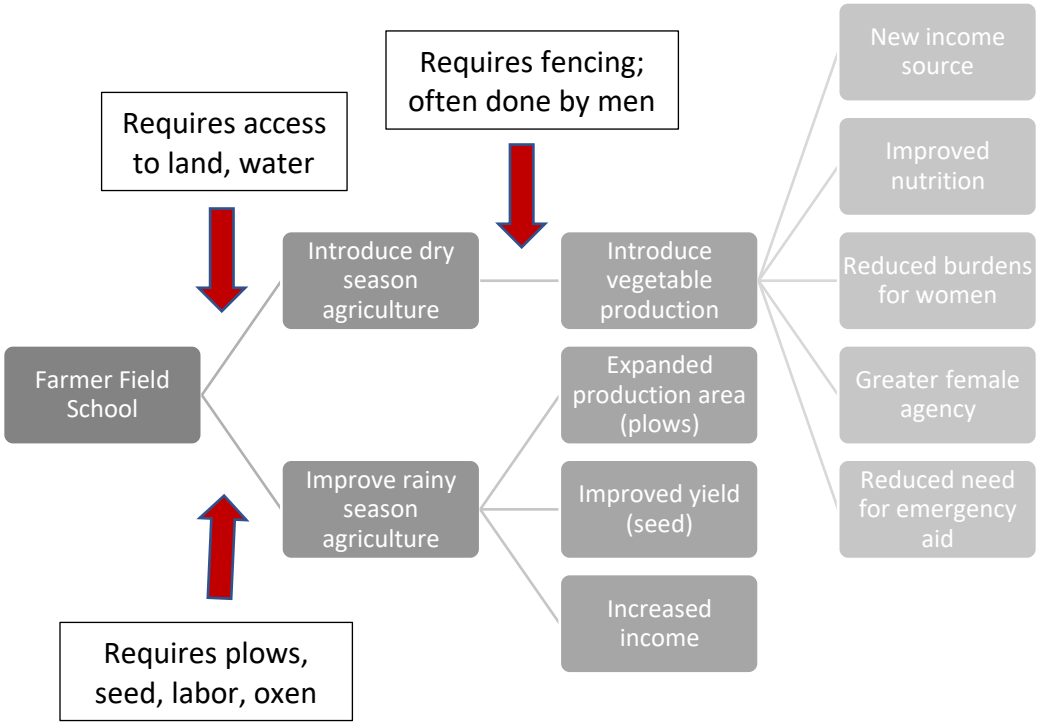
Collecting in-depth contextual information that informs the project and activities, including analyses of existing and potential dividers and/or sources of tensions, helps to ensure the negative, unintended outcomes are reduced or mitigated. Some of the community-based volunteers and a few project staff felt it was the responsibility of the community to resolve issues that emerged. The projects did not sufficiently foresee these potential outcomes, monitor the processes and thus resolve these tensions, or sufficiently build local capacities for conflict resolution and peacebuilding. This should not be viewed as a failure, but as a learning outcome that will inform the design of future programming.

Theory of Change

Some organizations reported to have developed theories of change for their own internal use, but these did not appear in the reports to GAC. Requiring a theory of change from the proposal period will better enable all partners to understand the activities, their linkages, and the assumed pathways of change. As has already been instituted by GAC, this has become standard practice for proposals. It is recommended that the theories of change be updated with each annual report as the organization implements and learns about the activities, outcomes, and project sites.

An example of a simplified theory of change for a common project activity is outlined below. Going through this process enables everyone to better understand the assumptions involved in the program design, better select metrics that reflect the expected changes, and better assess the potential barriers through which the assumptions may be prevented from occurring as

planned. In exploring the theory of change, it is possible to improve the program design by identifying gaps. For example, the reduced burden for women (e.g. carrying water) assumes that water is readily available and/or when included in the project, equally accessible. This assessment found both of these barriers exist, causing much concern in communities. As another example, expanded production area in main season agriculture assumes that there is equal access to plows, sufficient labor to manage the larger fields (increasing the labor burden for women), sufficient market access to sell yield, and sufficient seed to plant (past seasons they saved seed based on the smaller area). Unless addressed, these barriers may prevent farmers from being able to benefit from the introduction of the new technology (plows). In most communities, plows have not yet been used (being very recently introduced) and thus the projects did not have sufficient time to work with communities to mitigate these challenges. Theories of change should be advocated and utilized as a mechanism to enable organizational learning, not only as an additional reporting requirement.

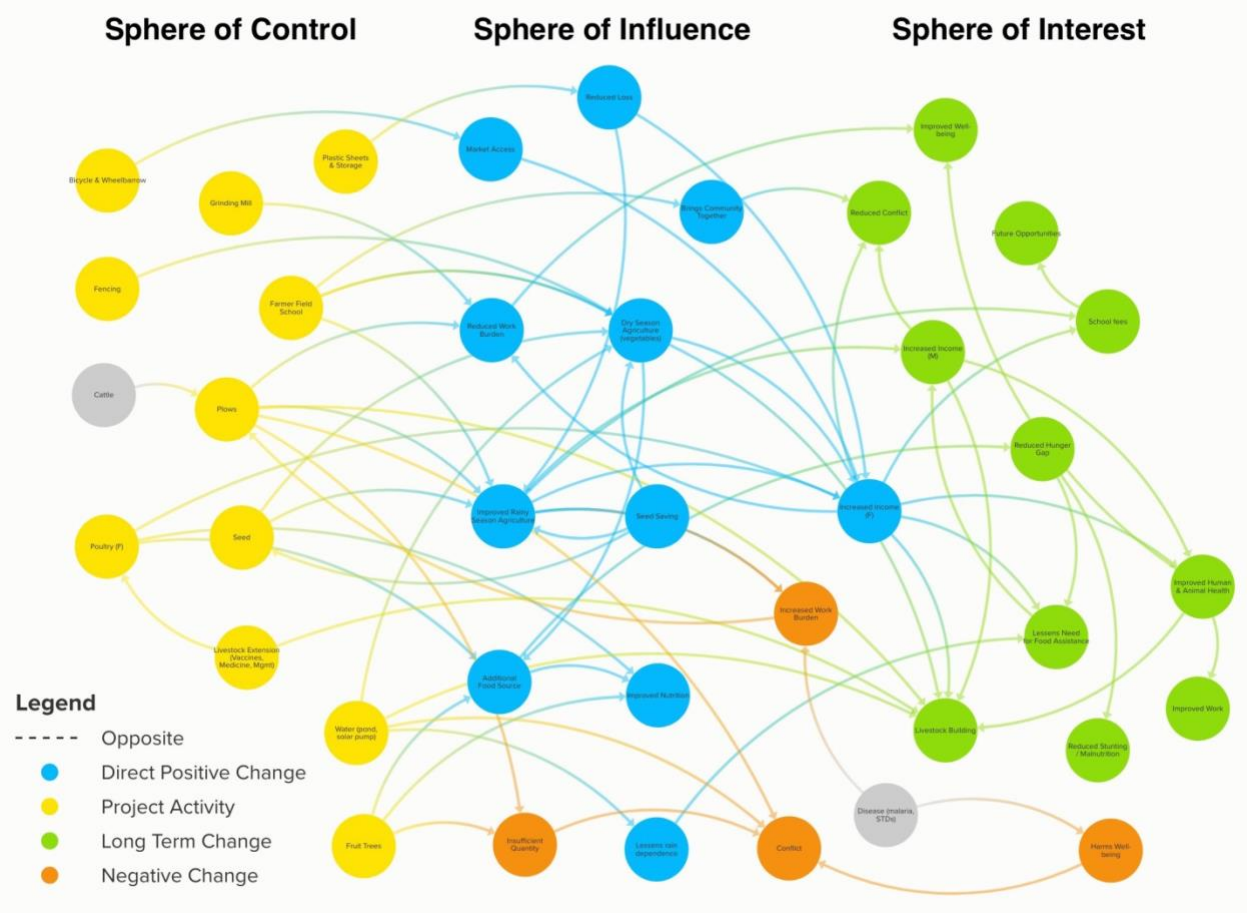


Example Theory of Change for Farmer Field Schools

Systems approaches

Systems approaches and analyses help understand the pathway to the objective, and the relevant metric for measuring enabling factors along that pathway. Utilizing this approach helps to inform project planning, bridging the activities to the outcomes and the various enabling factors that are required for that objective to be met. It also highlights potential problems. Similar to theories of change, thinking about communities as a system enables learning and allows for 'blindspots' to be identified. These do not need to be done regularly nor do they

need to become a requirement, however introducing systems thinking and approaches can support donors and implementing organizations to understand the interconnectedness of activities, and where gaps may exist. This process may also help abide by the requirements of the Feminist International Assistance Policy in better understanding the gendered nature of activities and gendered roles in society.



Partial example of a systems analysis for Kaujok

The above example is a partial version of a systems analysis for Kaujok. An example of how this can be useful is the orange circles, which are sources of conflict that emerged from project activities. Taking a systems approach allows organizations to better understand how indirect factors may also create barriers or constraints for the objectives. For example, part of the increased income that men and women obtain is put into livestock, which is the means through which people save and accumulate wealth and assets. In times of need, livestock can be sold. However, if these livestock encounter disease and die, the gains made by the project that were 'saved' in the form of additional livestock may be lost. None of the projects invested in the health of goats, sheep or cattle (e.g. vaccines, pharmaceutical access, management), which acted as a drain on the gains made, and may have been more appropriately considered had a systems approach been utilized. Another example of a blindspot is in relation to natural resource management, as crops are highly vulnerable to seasonal flooding. In addition to

identifying gaps, other specific questions, such as the pathways and processes involved in lessening the need for emergency assistance, can also be explored using systems approaches.

Downward accountability

The Feminist International Assistance Policy will require on-going consultation with women, girls and women's organizations, thus making downward accountability a mandatory activity in all projects moving forward. This is a positive shift, as two-way communication and community participation can improve design, needs assessment, prioritization, suitability of activities, effectiveness of implementation, and relevance of monitoring and evaluation.

> "People should come here with open minds and a willingness to learn. Communities have a lot of knowledge and experience."
> - NGO staff member

One project envisaged a series of community-based individuals as acting to support project management and monitoring. These included the chief, payam administrator, extension worker, and community members. The implementation struggled to involve all of these members, and in some instances members felt that the processes was one-way (reporting to the implementing partner) rather than two-way (acting as a partner in management). Despite these challenges, this initiative should be built upon and expanded. More mechanisms for feedback and downward accountability are needed, particularly avenues whereby community members have greater decision-making power about project activities and processes. This is also an important means through which programming can better integrate 'do no harm' approaches, as community-based actors can report concerns about emerging tension.

Alignment

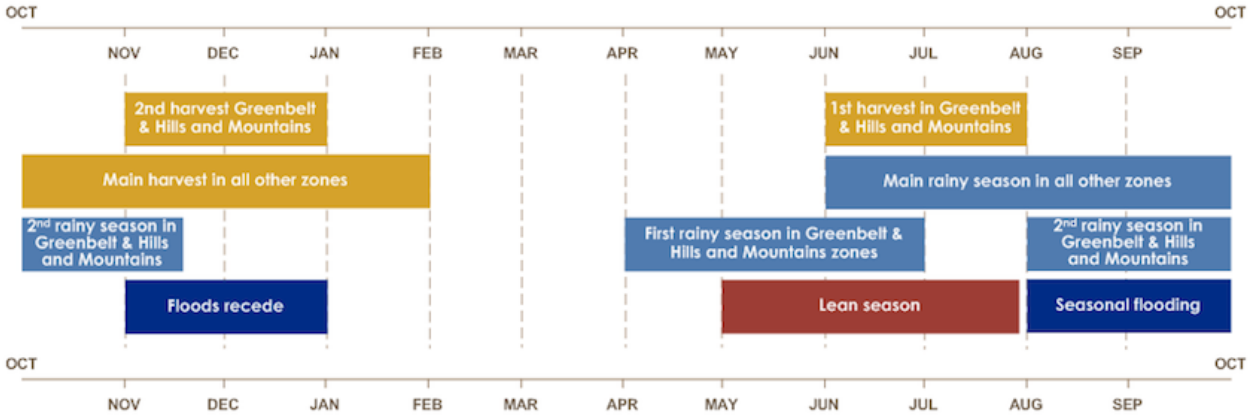
As the emerging state expands its activity, projects need to ensure they align and coordinate with them. For all projects, agricultural extension training was provided, but this was largely done in parallel with the state system (with the exception of areas where an extension worker was present), however more effort is needed to ensure the messaging of projects and extension workers are supporting one another, and avoid any potential issues of conflicting messaging. As the agricultural extension system has low coverage, this may require working with state-level authorities. Liaising with the relevant authorities and extension workers will serve to better align the activities. Building the capacity of the emerging state system will enhance the capacity of the permanent actor and thus improving service provision.

In addition to agriculture, different approaches were used to improve nutrition awareness and education as well as infant and young child feeding best practices. For some projects, nutrition was mainstreamed within the main activities (e.g. dry season agriculture, FFSs) while one

project operated nutrition groups, for whom some agricultural training and inputs were provided. If projects are to take a greater role in advancing nutrition, particularly for infants and young children, a good entry point is the emerging healthcare system. Women in several areas report going to clinics during pregnancy, for delivery, and after giving birth (e.g. for child vaccinations). The education provided at clinics could be strengthened, as an existing mechanism where women are accessing healthcare services and information. In areas where healthcare facilities are absent or too far to access, projects may provide temporary gap-filling services (aligned with the information provided by the governmental system).

Seasonality

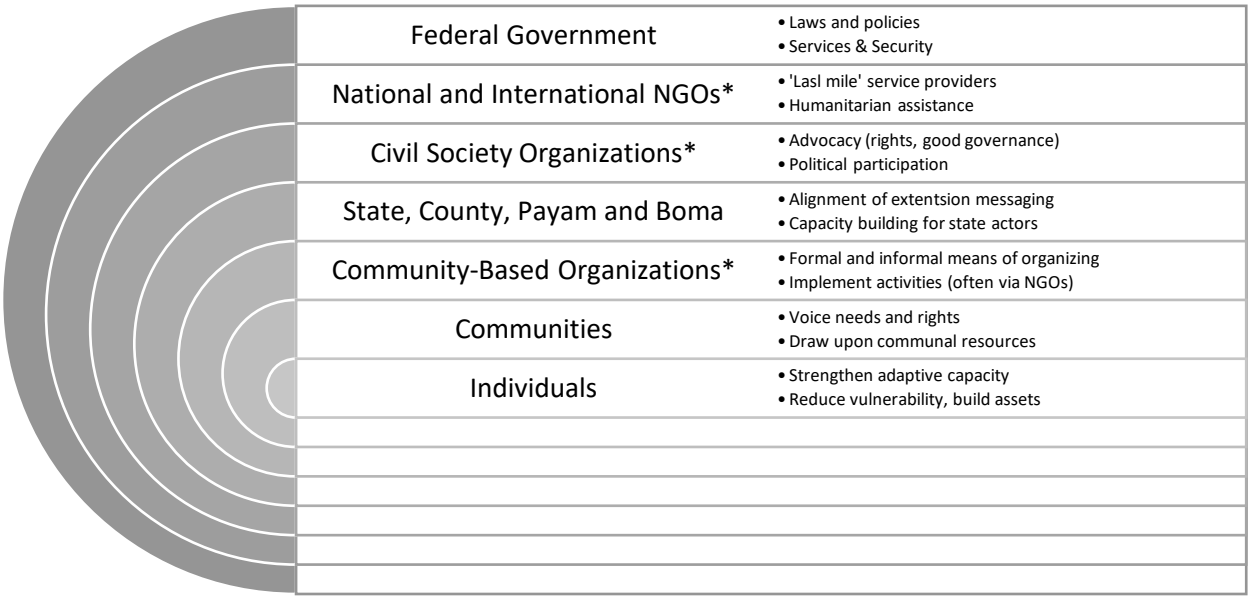
The seasonality of the agricultural cycle and food security in South Sudan is critical (see seasonal calendar below; FEWS Net, 2018). Project cycles need to focus on ensuring that full agricultural cycles are prominent in decision making. In recognizing that not all decisions can be organized to ensure funding is allocated according to the agricultural cycle, this might be managed by extending the project duration so that regardless of the date of approval and disbursement, a minimum number of complete agricultural seasons can be covered in the project duration (e.g. if funding is granted in April, the first agricultural season will be the dry season of Winter/Spring, meaning that if two full agricultural seasons are to be included, project duration will likely need to be three calendar years).



Building local capacity

Resilience is often framed around supporting individuals and communities. Many of the projects from which data was collected for this research report focused upon the individual and community levels. There are diverse entry-points to build resilience (see below) in South Sudan. Large projects, such as BRACED in South Sudan, were able to work at multiple levels to build resilience, namely international (with UNFCCC and UNEA), national (with advocacy, research and policy engagement), state and payam (early warning systems, forecasting models, resilience planning committees), community and household (field schools, VSLAs and school

clubs). A clear theory of change enabled the BRACED program to outline the linkages between these activities and the potential multiplier effects of the design.



Potential Entry Points for Building Resilience[4]

Empowering women and girls was a common objective across the projects, and there was some important progress made in this regard. Women felt empowered with new sources of income, which gave them greater agency and lessened their dependency upon their husbands, which they report as enabling greater harmony in the household and improving the well-being of all members of the household. This individual and household level change is important. Yet, at the community-level some women continue to experience marginalization and these changes require advocacy at additional entry-points to transform the environment wherein gender-based discrimination and violence continues to be the norm for far too many women and girls. In addition to change at the individual, household and community levels, there needs to be institutional (formal and customary), legal and policy changes. For example, advocacy is required regarding the right of women to own land, inherit land, and maintain land after the death of their husband at federal, state and local levels of government, lest women continue to experience discrimination and marginalization, and the broader environment entrenches their disempowerment. Engaging local institutions to explore power dynamics was part of one project, but that struggled to be implemented.

> "They [local organizations] have better influence, better knowledge, and are better placed to work with communities"
> - NGO Project Manager

[4] NGOs, CSOs and CBOs overlap significantly and are contested labels. These are used here simply to demark different activities of organizations, not to make a case for a particular definition or categorization of these terms.

Future collaborations should assess the strengths and gaps to ensure that proposed partners are well suited to activities. Having thorough processes for identifying community-based and civil society organizations to partner with continues to be critical (in the portfolio of projects assessed, community-based and civil society organizations were largely not involved).

Monitoring and evaluation

Some projects work in multiple states in South Sudan. However, the reporting on these projects is largely aggregated data. It is recommended that GAC require implementing partners to disaggregate data (e.g. by state if covering multiple states) as a mechanism to enable learning. Activities may work well in one region, but not another. When data is aggregated at a project level, these nuances are missed. Project staff see these, and may respond to them, but in order for GAC to also see these trends, they need to be included in the regular reporting. All the projects have aimed to build resilience. However, their metrics largely remain those of traditional rural development. There are emerging tools that can be used to adjust metrics, monitoring and evaluation to be more reflective of the resilience building objective. One example is the FAO's Self-evaluation and Holistic Assessment of Climate Resilience of Farmers and Pastoralists (SHARP), which was used by the BRACED program in South Sudan, and FAO's Resilience Index Measurement and Analysis (RIMA). Resilience remains challenging to measure. The emerging tools are not perfect, however implementing partners should be encouraged to explore these tools and integrate metrics that are relevant to their work.

Vision for transition

All of the projects would have been strengthened with a more explicit 'exit strategy' or transition plan. A vision about how the project activities could be sustained in the post-project period does not always work, and routinely faces challenges, yet without such efforts the potential for sustained change will be reduced. The vision for transition aligns with other recommendations (e.g. building capacity of national actors and alignment) in that these objectives could be utilized to build toward an end-of-project transition. In some instances, this might be role and responsibility transitioning to national actors, in others it might be ensuring systems are established (e.g. between traders and farmers), that land tenure issues are addressed and clarified in a (semi-)formal way, or that community management process (e.g. water or resource management) are able to run without project support. Donors and implementing organizations work on time-bound project periods, however there should, as best possible, be a vision for how these projects may be sustained beyond the project life.

Reflections on gender

"You have created dignity in us… We gained respect."
- Female Farmer Field School member

Summary of reflections

- Women were empowered with new sources of income and gained assets.
- Organizations could do a better job assessing changes to work burdens, time clocks are one way that this might be done (baseline, midline, endline).
- Quotas for female beneficiary selection should be continued, however strategic use is required to ensure the inclusion of men and boys.
- Projects should be designed to be suitable and appropriate for women, such as not having to travel long distances or for long periods of time.

From the perspective of women across the communities visited, there has been significant change in recent years regarding gendered inequalities. In the past, gender-based violence was common, particularly within the household. While new ideas about rights and responsibilities have been introduced, women felt that the main reason for the change is that women gained some assets of their own, and were not entirely dependent upon men. In the past, women would typically have to ask for funds for school fees, health costs, and food. Their partners may or may not be able to provide for these needs, causing tension in the household. With new assets and income, women said they did not need to ask, they had their own source of income, and, they proudly add, were able to contribute to the household in other ways (e.g. buying medicine for cattle when disease occurs).

"Now we have a chance to lead. We can speak."
- Female Farmer Field School member

These positive changes, however, are relative. Women have gained more freedom – the ability to participate in agriculture, to spend their funds, to buy assets, and experience less conflict in the household. At the same time, women are the bearers of heavy burdens, which has not significantly changed. Women collect firewood, water and food, care for children and elderly, prepare meals, are farmers, collect grass for thatch or selling in the market, collect soils for house building and repair, and carry goods to markets for sale. For several months of the year all household responsibilities fall upon their shoulders as the majority of working aged men migrate with the cattle herds (this includes the season when dry season agriculture is

practiced). As women were the majority of beneficiaries, the activities were women centric (i.e. dry season agriculture when men are away), and most gender components were mainstreamed, men and boys were minimally engaged on socio-cultural norms, gendered work burdens, and roles and responsibilities in society. That is not to suggest that no changes occurred, but that changes within the household were more significant than the societal ones.

Change is occurring, but only in some aspects. Female participants are happy with the improved household harmony, newfound agency and ability to provide for the needs of their families. As a portfolio focusing upon livelihoods, food security and agriculture the Feminist International Assistance Gender Equality Toolkit for Projects provides a clear pathway, and basic set of requirements, for future funding to ensure that projects are aware, as a minimum standard. From the toolkit, a few are specifically emphasized that were not present in the existing portfolio, and should be required moving forward: (1) Ensure design team has gender equality expertise, (2) Conduct a context-specific gender-based analysis to inform design, (3) Consult women, girls and women's organizations from the proposal onward, (4) Allocate adequate financial resources for gender equality expertise, (5) Identify challenges / barriers to the achievement of gender equality outcomes as well as strategies to overcome them, (6) Specify new or emerging opportunities to support gender equality outcomes, and (7) Actively involve beneficiaries in participatory monitoring and evaluation. As has been noted in this report, a number of these requirements could be met by recommendations made (e.g. downward accountability mechanisms, having a theory of change, using systems approaches to identify barriers and challenges).

Reducing burdens

> "Before we were not like this. We would go to the forest, to collect firewood and search for wild foods. Now we have water [for vegetables] and the solar pump is reducing work for us."
> - Female member of Farmer Field School

Women in South Sudan have a heavy work burden. Because all the projects introduced new work burdens for women, it is important to critically reflect on the activities and impacts from a lens of gendered work burdens. An illustrative attempt was made to assess the shifting nature of work burdens as a result of project activities for agricultural activities below, which is an approximation based on information provided, and is not based on detailed analysis. Nonetheless, it is hoped that this presents a window into better understanding the dynamic nature of change. The single activity of dry season agriculture had multiple positive and negative impacts on work burdens for women, as one example. Future projects, if they want to assess this in greater detail, might use daily clocks in their baseline, midline and endline assessment to understand the shifting time burdens, and their gendered nature.

Ox plows	Not done by hand
Ox plows	Additional land size (weeding and harvesting)
Dry season agriculture	Getting water for irrigation, maintaining fencing
Dry season agriculture	Gathering and preparing organic fertilizer
Dry season agriculture	Not needing go to the forest to collect food or firewood (because of new food and income sources)
Dry season agriculture	Increased income (not collecting grass or wood to sell in market)
Dry season agriculture	Solar water pump (reduced labor)
Dry season agriculture	Carrying goods to market (often far)
Dry season agriculture	Maintaining, using water system (shallow well, canals, pond, treadle pump)
Farmer Field School	Collective labor sharing (e.g. building fencing)

Note: Green is a positive change, yellow a moderate labor increase, red a large labor increase.

Introducing a work burden is not necessarily negative, as it may alleviate a more strenuous or time-consuming burden. For example, the introduction of ox plows creates more labor in the form of weeding and harvesting, but reduces a heavy and time consuming burden of preparing fields by hand. It also offers significant reward, as the hand preparation allows for 0.5 to 1 fedan of land to be prepared, while ox plows allow for 4 to 6 fedan. In addition to the increased land cultivated, yields using ox plows are higher than those done by hand. The benefits of additional yield are multiple, the direct results being improved food security for the household and increased income if/when yields are sold. Most projects only report on burden alleviation, and a more nuanced engagement with labor burdens will enhance understanding about gendered roles and responsibilities in relation to project activities. Potential entry points for alleviating work burdens for women include introducing improved cookstoves (reducing need of firewood) and improving access to grinding mills (alleviating demands of doing by hand).

Quotas

A number of projects and activities had minimum quotas for female participation and/or female beneficiaries in the GAC portfolio. This had the potential to cause tension, as men could be excluded or challenged. Women in the project site areas, however, felt that project quotas were positive, and were processes that supported changes to power dynamics. Taking leadership roles, even if challenges remain regarding equal weighting of opinions, ideas and time to speak, acted as beacons of change – that women can do tasks and hold positions traditionally within the male domain. One community explained how John Garang also used quotas to ensure women participated in government and appreciated that the projects did as well – they in fact called for the quotas to be increased. While quotas have worked well, and are recommended to be continued to support equity-based programming, there is also a need to recognize that not all activities are strictly gendered and that some activities are done in partnership between husband and wife. A sense of working together and supporting one another ought to be encouraged, and therefore quotas ought to be used strategically, rather than in generalized way. Involving men can act as a means to challenge and change gendered

dynamics. In some instances, this may mean broader inclusion while in other instances it may mean having activities that are designed to include men (e.g. focusing gender mainstreaming in main season agricultural training instead of dry season agricultural training).

Attempts to reduce gender-based violence will have limited impact if they are mainstreamed / integrated into activities that primary engage women (a limitation of quotas for beneficiary selection). In some projects, beneficiary quotas were used to ensure a high level of female participation. In other cases, the de facto of the activity type was such that women who be the majority of participants (e.g. dry season agriculture, a time of year when the majority of men have relocated with cattle). The use of quotas and the promotion of dry season agriculture are both recommended. However, in so doing it is useful to reflect on the unintended impacts of these choices, one being that if mainstreaming occurs within this context, the majority of the audience will be women. It is critical to engage boys and men, to think about masculinity and gendered norms, and thus the importance of strategically using quotas.

Design

Although not common, those activities that required women to travel long distances (e.g. to access seed at a trade fair) or to stay for periods away from their households (e.g. training held in another state) presented challenges for female participation. This socio-cultural contextualization is not new to South Sudan, yet programs still design activities that include this modality, and are (re)learning that this will effectively exclude most women from participating. In another instance, the ability for women to participate in an activity was constrained due to limited time and prioritization of other tasks, despite a high interest (e.g. literacy and numeracy training). Having context-specific gender-based analyses as well as women from the communities and women's organizations from the country provide input into the proposal design will greatly reduce these barriers. This will be the minimum requirement as per the Feminist International Assistance Guideline.

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