



STRENGTHENING AGRICULTURAL MARKETS AND FOOD SECURITY (SAFE) PROGRAMME IN SUDAN.

CONCEPTUAL DESIGN FOR COMMUNITY AGRICULTURAL PRODUCE STORES

Project description

Mercy Corps, in partnership with the Adventist Development and Relief Agency (ADRA), is implementing a SIDA-funded program called 'Strengthening Agricultural Markets and Food Security (SAFE) in South Kordofan and Blue Nile states in Sudan.

The SAFE program's overall goal is to reduce vulnerability; increase income and food security of 28,000 small-scale farmers in South Kordofan State. The program uses the market systems development approach and will not deliver direct services but instead will facilitate changes in agricultural market systems (among key stakeholders such as private companies, financial institutions, farmers and the entities which make rules norms) to ensure a better enabling environment for farmers. Specifically, the program aims to achieve the following objectives:

Objective 1: Male and female small-scale farmers have increased and more climate-resilient yields.

Objective 2: Male and female small-scale farmers increase sustainable natural resource management practices

Objective 3: Male and female small-scale farmers have improved market linkages

Objective 4: Increased gender equity and increased empowerment of men, women, boys and girls

Objective 5: Male and female small-scale farmers have increased preparedness and ability to respond to disasters

According to the World Food Programme in Sudan, PHH contributes to between 40-50 percent of agricultural loss¹. To reduce post harvest losses, the SAFE program is:

- (1) enabling farmers to access post harvest handling materials such as Hermetic bags and (2) supporting farmer cooperatives to build agricultural produce storage facilities.
- (2) supporting farmer cooperatives to construct permanent, secure and dry storage facilities, referred to herein as "Stores". In 2021 the SAFE programme supported 30 farmer cooperatives across the two states to construct stores made of cement, burnt clay bricks and iron sheets with each store measuring 9x5 meters. Fifteen (15) were constructed in Blue Nile by our partner ADRA and 15 in South Kordofan by Mercy Corps.

Limitations: The sites where stores will be constructed are mostly remote with poor access to social services like water and electricity which are required for part of the construction. Being a post-conflict and rural area, there is a limited number of small companies operating in the area and other companies may be hesitant to undertake projects that far. Additionally, part of the construction activities will stall

¹World Food Programme, [Sudan Country Strategic Plan: 2019-2023](#), 2018



during the month of Ramadan when work generally slows down- as witnessed during construction of the first phase of the stores.

Ideally, the storage facilities should have had an office area within the building where business transactional records are kept and meetings are held. However, this was omitted from the design due to Budget constraints.

Construction Overview

Under the program an additional 30 stores are expected to be constructed in 2022, fifteen (15) in each state. This will bring the total number of stores constructed under the program to 60 out of a target of 64. Site selection for the additional 15 stores in South Kordofan by Mercy Corps is complete and the infrastructure project procurement process can be initiated. Figure 1 shows the locations of the 15 stores to be constructed by Mercycorps in SKS.

Locations:

Figure 1: Locations of storage facilities to be constructed			
No.	Locality	Village	GPS Coordinates
1	Aref Ashrgei	Dara	11 8' 2.66" N 29 45' 15.90" E
2	Aref Ashrgei	Dabakaya	11 19' 11.71" N 29 27' 50.94" E
3	Aref Ashrgei	Sarf Aldei	11 6' 52.49" N 29 44' 10.52" E
4	Aref Ashrgei	Alsuodia	11 6' 7.02" N 29 47' 29.17" E
5	Aref Ashrgei	Lagook	11 5.491' N 29 45'.526' E
6	kadugli	Bardup	11 12' 19.90" N 29 38' 16.90" E
7	Diling	kenana altadamon	12 16' 52.27" N 29 38' 48.22" E



8	Diling	Kenana Alfadul	12 15' 4.64" N 29 40' 51.89" E
9	Diling	Am alwan	12 13' 25.16" N 29 40' 49.09" E
10	Diling	Aldagag	12 17' 4.69" N 29 41' 47.00" E
11	Diling	Alnela	12 12' 24.90" N 29 46' 21.97" E
12	Diling	Aldaen	12 10' 23.53" N 29 45' 18.44" E
13	Habilia	Nuelly	11 41' 14.39" N 29 48' 27.76" E
14	Habilia	Altongl	11 51' 38.69" N 29 55' 33.50" E
15	Habilia	krkaraye	11 57' 14.95" N 29 40' 47.34" E

Store Design:

The drawings and specifications for store design in 2022 have been adapted from the one of the previous year and can be found here [Stores construction - SD Team Drive - Google Drive](#). They were prepared by Mercy Corps engineer Freydoun Borhani.

Budget:

The 2022 estimated cost per store is **\$ 14,415**. This is based on the materials and labor cost estimates found here [Cost for material ,store 9x5 December 2021 - Google Sheets](#).. A detailed BOQ has also been written and can be found here [Copy of BOQ SAFE store FB 5 Feb 2022](#)

During the 2021 period, Sudan experienced very high inflation and unfavourable currency rates, resulting in the budget for the stores constructed being significantly higher than originally planned (approx. \$20,000 compared to \$9,000). Many lessons were learned but most notable is that for 2022, Mercy Corps should contract the supply of materials needed for construction and the actual construction to be done by the successful tender respondent/s. The tasks of procurement of construction materials and that of the physical construction should not be decoupled. By having a



contractor both procure the materials needed and complete the construction of the stores (and all that it entails) mitigates Mercy Corps' risk of material cost fluctuations, material storage and transportation to the selected sites and minimizes the need of Mercy Corps' personnel from having to spend inordinate amounts of time following up with suppliers. The "contractor" bears this responsibility.

For complete clarity, the contractor will be responsible for all material, labour, tools, machinery and where needed transportation of these to the selected sites. Including but not limited to; welding and drilling machinery and all necessary tools required for mixing and pouring concrete and the frame components for concrete.

During the annual budget modification last done in May, 2021, the money allocated to build each of the additional 15 stores was increased to \$15,000.

Standards that apply:

Local country standards,

Donor standards

Asset Transfer	General Conditions - Article 5.5	Unless otherwise specified in the Special Conditions, equipment, etc. paid for under the grant should be transferred to local partners and/or final beneficiaries of the project. This must be done before the	General Conditions – Article 7.3	Equipment and consumables paid for by the Grant, must be transferred to local partners and/or final beneficiaries. This must be done before the end of the activity period of the project.
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	General Conditions - Article 2.5	end of the activity period of the project. The list regarding transfer of ownership of assets referred to in Article 5.6 shall be annexed to the final report. Assets are defined as equipment, vehicles and supplies.	Annex C – Transfer of ownership of assets form	MC must include copies of the proof of transfer for each item above 5,000 Euros with the final financial report, using the template "Transfer of ownership of assets form" (Annex C). Proofs of transfer of equipment for each item less than 5,000 Euros per item shall be kept by MC.
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Mercy Corps Standards

1. Set Up and Planning:

- Project files created.
- Project Work Plan established with technical project parameters, work breakdown structure, schedules, and a detailed budget.
- A project delivery team identified.

2. Implementation:

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- a. Program launched and implementation responsibilities assigned.
- b. Includes soliciting request for proposals, issuing contracts and
- c. service agreements, managing budget and schedule. Requires adjusting and tracking activities,
- d. communications, quality, risk, organizational capacity, and coordinating the roles and
- e. responsibilities.

3. Monitoring and Evaluation:

- a. Quality Management, monitor contract terms and performance; evaluate deliverables and physical work (engineering/construction) for applicability and compliance with industry best practices; and inspect materials/work for compliance with contracts, design, budget, and schedule.
- b. Adjust and track changes and delays, communications, and quality of products incorporated into the project.
- c. Ensure compensation aligns with actual performance of work.

4. End-of-Project Transition:

- a. Collaborate on project documents.
- b. Inspect final work and punch lists, contractual completions and payments, as-builts.
- c. Beneficiary training/ turn-over of assets to beneficiaries. Letters confirming asset transfer required.
- d. Lessons learned.

Schedule:

Construction to commence upon successful award of tender and must be complete by June, 2022. It is not necessary that the stores be constructed sequentially. Construction should begin and run in parallel at multiple sites for the stores to be completed within the required timeline.

No.	Activity	Role owner	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
1	Development of technical drawings, SOW and BOQ	Mercy Corps								
2	Approval and review of technical drawings, SOW and BOQ	Mercy Corps								
3	Tendering	Mercy Corps								
4	Award and contracting	Mercy Corps								



5	Site handover to the contractors	Mercy Corps, community								
6	Construction	Contractor								
7	Inspection and fixing of defects	Mercy Corps and contractor*								
8	Handover by contractors	Contractor								
9	Handover to farmers	Mercy Corps								
10	Training of store management committee	Mercy Corps								

* The role of Mercy Corps will be to inspect and provide feedback while the contractor will fix the defects

Quality Control:

Who performed this last year? Who signed off and approved the store be turned over to the Farmer Cooperative?

At least one qualified engineer with a minimum of a degree in civil engineering will be recruited to oversee the construction from the onset until completion. An engineering assistant with a minimum of a diploma in civil engineering will also be recruited to support in day-to-day oversight

Quality Assurance:

The program manager will inspect all sites and give feedback at least thrice; ideally around mid-way, before plastering and when the construction has been reported as completed by the contractor and supervising engineer.

Risks and assumptions

- The high inflation levels which were seen in 2019-2021 could re-occur making it difficult for the contractor to complete the work with an agreed budget. In order to mitigate this, Mercycorps will do the following : Successful contractors will be advised to procure all the needed materials at the start of the construction to mitigate against this, Mercy Corps will offer advance payments for contractors who meet requirements and payments will be made to contractors upon completion of every phase of work.
- Unfavourable forex exchange rates seen in 2019, 2020 and 2021 may prevail during the construction period hence making materials more expensive and constructors unable to complete the work with an agreed budget. To hedge against this, the contract will be issued in USD.
- Insecurity in the project areas especially stemming from ethnic-based conflicts as well as the changes in the political situation in Sudan could impede the movement of construction



materials, labor and the actual construction. The contractors will be encouraged to procure and deliver most if not all materials to the site before embarking on the construction, to use labourers from the area and to closely monitor and adapt the pace of work based on the situation.

- Internal factors within the contractor's companies may hinder completion of the work to the required quality or in the required timeframe. To reduce the impact of this, the Mercy Corps engineer will provide routine and timely monitoring to identify and manage challenges timely and Mercycorps will contract at least 4 different firms to do the construction works at different sites simultaneously : Contractors will be required to start work in all the 15 sites at the same time.
- Based on last year's construction projects experience, work was put on halt in some sites because the community did not provide all the required quantities of materials as community contribution. To mitigate this, the SAFE program will only select groups that have collected most of the required quantity of materials and will continue working closely with the community members to mobilise the remaining materials on time.
- Errors during construction. Most often the workers at the projects sites are inexperienced and lack construction skills and expertise. This contributes to potential errors in the building process which results in potential project delays. Mercy Corps' engineer will work closely with the contractors and offer routine monitoring so as to reduce such occurrences and ensure timely corrective measures are made.