



Brining hearts and minds together for children

Plan International Sudan

White Nile Program Area
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Term of Reference for Manufacturing and installation of a Community Solar Oven under " Strengthening food production and access to food resources through renewable energy solutions for vulnerable populations living in host communities and refugee camps in Sudan, project funded by the Italian Government

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List of Abbreviations

MSP	Multifunctional Solar Platform
IGAs	income-generating activities

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3. Organization Background

Plan International is an independent child rights and humanitarian organization committed to children living a life free of poverty, violence and injustice. We actively unite children, communities and other people who share our mission to make positive lasting changes in children's and young people's lives. We support children to gain the skills, knowledge and confidence they need to claim their rights to a fulfilling life, today and in the future. We place a specific focus on girls and women, who are most often left behind. We have been building powerful partnerships for children for more than 75 years, and are now active in more than 70 countries. In Sudan, Plan operates in four states which are White Nile, North Kordofan, Kassalla and North Darfur. The assessment is to be conducted in White Nile South Sudanese Refugees camps and host communities in Al Salam locality, with focus on Al Redis 2 camp.

4. Project Background:

Based UNHCR Sudan - South Sudanese Refugees in Sudan Dashboard as of 30 September 2024, Sudan is home to 632,179 population of South Sudanese refugees (SSRs) officially registered were 418,159 registered by government and UN sources, They latter lived in Sudan before the conflict and are considered refugees as they cannot safely return to their country. The political, security, socio-economic and operational context in Sudan dramatically change with the start of the conflict in April 2023, this affects the South Sudanese population. The project focus on refugees displaced to White Nile state in Sudan particularly refugees in Al Redis1 &AL Redis2 and the host communities, the direct beneficiaries including adolescents, youth and young refugee women and members of host communities aged 15-35 years who will directly benefit from food production through solar ovens, MSPs and mills.

Deforestation is one of the most serious environmental crisis facing the world today. Its far-reaching effects include:

- The decreasing availability of firewood.
- Soil protection against erosion.
- rainwater recharges groundwater increasing as well as control of the water release rate in watersheds, helping sustain freshwater supplies.
- Green houses emissions reduction.
- Increasing of oxygen.

The project, while protecting the local ecosystem, intends to create employment and self-employment opportunities for the refugees affected by the Conflict in South Sudan and other nearby countries, by providing with capacity building trainings and the development of Income Generating Activities based on renewable Energy solutions such as a Multifunctional Platform, object of this tender, and a solar oven which will be installed by the project.

The project is designed around three Expected Results - each representing a thematic component, which complements the following:



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- Component 1: A.1: The women and young beneficiaries acquired the technical, financial and management skills needed to manage and maintain the renewable energy systems for food production, namely the multifunctional solar platform and the community solar oven.
- Component 2: Strengthening food security for women and youth through the development of renewable energy-based food production/distribution in the refugee camp and host communities
- Component 3: The set-up of Renewable Energy IGAs are supported and accompanied by providing more economic resources to vulnerable households

Project Objective:

Strengthening food production and access to food resources through renewable energy solutions for vulnerable populations living in host communities and refugee camps in Sudan

- Outcome 1: The women and young beneficiaries acquired the technical, financial and management skills needed to manage and maintain the renewable energy systems for food production, namely the multifunctional solar platform and the community solar oven
- Outcome 2: Strengthening food security for women and youth through the development of renewable energy-based food production/distribution in the refugee camp and host communities
- Outcome 3: The set-up of Renewable Energy IGAs are supported and accompanied by providing more economic resources to vulnerable households to ensure greater food security.

Beneficiaries: 80 youth (60% women and 20% host communities) will benefit from training opportunities, direct employment opportunities and livelihood opportunities for self-employment and micro-businesses, breakdown of beneficiaries as follow,

In particular, 20 refugees and members of the host communities with at least 60 per cent female representation and including 20 per cent host community representation will be selected as members of the management committees: 10 persons for the two committees for the management of the two solar ovens and another 10 persons for the management committees of the two multifunctional solar platforms.

Another 40 people, again selected from the same group composition, will be considered as operators of at least 10 small Renewable Energy based Income Generating Activities (RGAs).

Finally, at least four young men and women from the host community, already operating mills, will be selected as mill operators connected to Multifunctional Solar Platforms (MSPs) within the camp.

2 Multi-Functional Solar Platforms (MSP) is a project that presents findings and recommendations based on a labor market and energy needs assessment conducted in (AIREdis 1), (AIREdis 2) refugee camp and host community, in AISalam Locality, White Nile State.

The scope of the project is to cover all the existing small-scale businesses in (AIREdis 1), (AIREdis 2) markets. The most dominant kinds of business activity in the two targeted markets are vegetables selling, fresh fish selling, small mobile charging, dried food making, tea making, food making and small shops.

The project intends to create employment and self-employment opportunities for the refugees affected by the Conflict in South Sudan and other nearby countries, by providing with capacity building trainings and the development of Income Generating Activities based on renewable Energy solutions such as a Multifunctional Platform, object of this tender, and a solar oven.

5. Objective of the Task

The main purpose of this assignment is to manufacture, transport and install of two Solar Oven with bakery shop for each (4*4 rooms with all infra structure) for community usage in Alredais 1 & Alredais 2 refugee camps in White Nile State at Alslam locality.



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In addition, the Solar Oven will be used in coordination with the milling system linked to the MSP, in order to guarantee a food production of bread and other floor based products within the camp.

On top of that a specific training course on the technical aspects (e.g. assemble, install, maintain) as well as on the managerial aspects (e.g. marketing, business plan/generate income, managing operations, stock etc) will be included for the operational committee inside the camp.

The detail design below is based on general market information.

6. Technical Specifications

6.1.AREA OF APPLICATION

The present technical specifications concern the supply and installation of solar community oven to deliver a continuous and reliable bakery and cooked food provision service in the project's target camp.

These specifications are minimum requirements that must be met by tenderers. However, bidders are encouraged to propose improvements in line with the following basic principles:

- (i) reliability of the equipment,
- (ii) optimisation and easiness of the operating and maintenance procedures.

6.2.OPERATING CONDITIONS

The equipment requested is intended to be installed in isolated locations with few qualified mechanical and electrical personnel. Resistant material, which respects the technical specifications indicated, is therefore required, both for the main components and for the mounting accessories, in order to require the lowest possible maintenance and to resist corrosion and long-term degradation.

6.3.REFERENCE CLIMATIC CONDITIONS

In order to facilitate the comparison of tenderers' proposals, a set of reference conditions is specified in this paragraph, which relate on the one hand to the climatic characteristics to be considered for the dimensioning, and on the other hand to the standard dimensions of the devices, specified by the standard installation drawings. It is specified that the actual installation parameters may differ from these standard values.

The equipment proposed by the bidders shall be sized to deliver the daily energy specified for each site under the reference climatic conditions corresponding to a "typical day" profile. The climatic data for each region is given below

Monthly and annual weather data for White Nile State

Month	Minimum ambient temperature °C	Maximum ambient temperature °C	Bright sunshine duration HRS	Relative humidity %	Mean Wind speed measure KM.P.H



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January	19.1	32.9	9.6	39	10
February	18.03	32.7	9.7	34	10
March	22.8	38.5	9.2	29	10
April	24.8	40.1	9.3	26	8
May	26.6	39.9	8.4	46	8
June	25.8	38.6	7.7	55	10
July	22.0	33.8	6.3	75	9
August	23.5	32.9	6.3	78	7
September	23.5	33.7	7.5	76	6
October	24.4	37.6	8.9	58	6
November	22.8	37.3	9.8	40	8
December	19.6	33.6	10.0	39	10
Annual	20.9	36.0	8.6	49.9	8.5

Source: (Meteorological Authority - White Nile State 11/01/2022)

7. Services and Technical Specifications

7.1.SCOPE OF SERVICES

The services covered by these technical specifications relate to the following aspects:

▪ Studies

The Bidder shall collect all information required for the preparation of its technical bid.

To this end, the tenderer will be required to analyse the local conditions and context under legal, technical, operational point of view.

The list of documents to be submitted for this proposal can include:

- Provisional order and supply schedules;
- Layout plans for all the components etc;
- The technical data sheets specifying the exact characteristics of the equipment.
- Detailed description of the installation.
- Detailed description of the training courses and support for the start-up of the activities.
- Financial Offer



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All documents will be submitted in English to Plan International for approval prior to the start of the work.

▪ **Supply and works**

On the basis of a detailed schedule, the tenderer will provide dates for the supply and delivery of the equipment to the site. This schedule should indicate the dates for the key stages: (i) delivery of the deliverables, (ii) procurement, (iii) acceptance, (iv) opening of the site, (v) various construction phases, (vi) testing phases, (vii) acceptance of the installations. It will be no longer than 4 months.

The tenderer shall:

- Supply and install the solar oven;
- Testing and delivery of all components;
- Technical support within the warranty period for all components and accessories;
- Maintenance. The bidder shall prepare Operations and Maintenance (O&M) manuals which shall include maintenance routines for each of the oven parts and components;
- Corrective maintenance guidelines, including a remote support if applicable.
- In addition to this, the bidder will have to carry out a training activity on the use of the equipment and best practices for oven managers, with adequate training manuals.
- The tenderer shall supply all necessary components, unless otherwise specified, together with accessories, labour, scaffolding, etc., at the tenderer's expense to install and commission fully operational units within the contract period.

▪ **Trainings**

The tenderer will provide a detailed description of the included trainings aiming to facilitate the installation, O&M, security for all the operators and clients, Management Sales & Marketing, Distribution, Inventory Control, Cost Accounting, income generation, financial follow up.

The oven will be managed by a local committee. As a reference, it will be staffed as follows:

- 1 General Manager
- 2 Cooking Assistants
- 3 Sales / Delivery people
- 4 Cashier / Accountant



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7.2. TECHNICAL REQUIREMENTS FOR INSTALLATIONS AND EQUIPMENT

(i) General provision

The solar oven is based on solar light concentration technology and is on easy to mount/maintain solar mirror. The technology is preferable easy to apply at local level.

The oven can produce bread and food that can be baked, boiled, and steamed. The oven can cook practically any food product: Rice, Beans, Maize, Dahl, Vegetables, Pasta, Fish, Meat.

(ii) Mechanical design and exposure to environmental conditions

All structures, frames, bolts, nuts, guy wires and fasteners must be made of corrosion resistant materials.

(iii) Accessories

Each location will be equipped with a package that includes as a reference:

- 20 durable bread pans
- 20 cake pans
- 10 flat pans
- 2 heavy duty rolling pins
- 1 large oven peel
- 2 dough scrapers
- 6 hot pads (gloves)
- 1 rugged insect-proof flour bin at least capacity 20 Kg
- 2 wire whisk
- 2 large mixing bowls (minimum capacity 4 litter).
- 10 Silicone plates (different shape)
- 2 Manual biscuit making machine (size 8)

7.3. REFERENCE SPECIFICATIONS AND PERFORMANCES

SPECIFICATIONS

This oven is specifically designed for Third-world bakery operations. Each oven is equipped with a collapsible reflector assembly which folds up for easy transport and will be mounted on a structure with wheels in order to be movable (360° movement), which will allow them to be pushed into a secure storage area when not in use.

Each Solar Oven will reach working temperatures up to 350°C / 662°F.

Rugged durable construction. These ovens should have an effective life of at least 20 years.
Easy Track tracking system that enables precise manual adjustment to follow the sun



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Propane back up system in order to operate on rainy days or at night
Trailer mounted which facilitate easy transportation and secure for storage
Simple to operate: operators can be trained in a matter of hours
Collapsible reflector assembly that folds for easy transport and storage

It will be equipped with regulated temperature roaster for nuts, coffee, cacao, cashews etc.

It will be equipped with dryer for dehydrating fish, fruits, vegetables.

PERFORMANCES

As reference the expected daily outputs of the solar oven are:

- 500 cookies/day
- 300 breads per day
- 100 liters of water can be boiled
- Up to 500 cooked meals per day
- at least produce 20 KG of flour products

Both refugees and the community members through the management committee will use this facility to prepare or simply buy bread and/or meals. The management committee will organize and coordinate the access to these service.

Solar Oven Fence

A metal fence (7.5 meter by 7.5 meter) should be built around the solar oven area (bakery shop + solar oven)

The fence should be based on 2-inch corner iron beams, 2.5-meter height (60 CM buried) with fixed camel eye wire, a door with (4*8) heavy square pipes with the construction of the shoulder 2 bricks x 2 bricks. With all accessories according to rules of the trade and the supervising engineer instruction



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8. Plan International Sudan Responsibilities:

- Arrange and manage negotiations with the government and other implicated actors such as the UNCHR for the location of the oven and other logistics aspects.
- Provide the consultant team all the relevant project information
- Project Manager & YEE lead, MEAL Coordinator and Plan International Spain will be involved in all assessment process to ensure that this exercise meets the project's objective.

9. Consultant Activities and Responsibilities:

The consultant key activities will include but not be limited to the following:

- Desktop review and analysis of the relevant data/information related to the preliminary study previously performed.
- Submission of a draft design and finalize it based on comments and inputs from Plan International.
- Submission of final design.

10. Expected Consultant Deliverables

- Quality documents (Narrative, Drawings, Technical specifications, O&M Manuals, training materials) for one single solution for the Multi Solar Platform.

11. Consultant Profile

- At least experience in 2 similar jobs of Solar Platform designs related to renewable energy based IGAs (to be demonstrated with documentation).
- Familiarity with humanitarian settings. White Nile State especially refugee's business community is a plus
- Excellent networking skills.
- Excellent knowledge of gender equality and protection issues.
- Excellent communication skills.
- Gender balanced team.

12. Submission Information:

Interested candidates are invited to submit via email one (1) application package to Operation Support Service Department via Ahmed.Ibrahim@plan-international.org

- CV in English which clearly states relevant expertise/experiences;
- 1 technical proposal including detailed work-plan and methodology
- O&M support strategy
- Training sessions and contents
- 1 financial proposal, which shall include consultants' fees as well as all other costs related to the design (transportation and accommodation if needed, etc).



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Only shortlisted candidates will be contacted for further steps.

13. Data Confidentiality and Privacy and Safeguarding of children and young people

The Consultant undertake to respect and protect the confidentiality of all information acquired as a result of or pursuant to this Term of Reference and will not, without the other Plan International prior written consent, disclose any such information to a third party, unless it is required to do so by any applicable law or regulation or is specifically authorized, Plan International must comply with Applicable Law and implement any additional policies or procedures as required¹. Moreover, other Plan International policies impose additional requirements regarding the collection, use, and protection of particular classes of Personal Data, including the requirements described in the Global Policy Safeguarding Children and Young People².

The Consultant must read, sign on and apply Global Policy Safeguarding Children and Young People in all the process of this study, as well as the Anti-fraud policy.

14. Terms of Payment

Plan international Sudan shall pay the consultancy fee to the consultant as agreed between both the parties by contract agreement in USD

p. All expenses shall also be included in the contract agreement. Initial payment of 30% will be made upon the signature of this agreement with detailed work plan approved by Plan international-Sudan, the remain being paid upon the delivery of the completion of all previously outlined activities.

15. Annexes

1. **Project Proposal**
2. **Project Log frame work**
3. **Plan Child Protection Policy**
4. **Best Interest Assessment (BIA)**
5. **Similar design examples**
6. **Financial proposal template**

¹Data Privacy Policy, Plan International, March 2018.

²Global Policy Safeguarding Children and Young People, Plan International, November 2017.



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ITEM	UNIT PRICE	UNIT	TOTAL PRICE
SOLAR OVEN			
TRANSPORTATION			
FORNITURE			
ACCESSORIES			
Civil work(bakery room)			
TRAININGS			
O&M SUPPORT			

A handwritten signature in blue ink, appearing to be "Dina", with a horizontal line drawn underneath it.