



*Empowered lives.  
Resilient nations.*

**Concept Note**  
**Pilot Project on**  
**Renewable Energy Solutions for Basic Services and Recovery**



**June 16, 2016**

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## Introduction

South Sudan, emerging from the mid-December 2013 crisis, is an oil rich economy, well endowed with virgin agricultural and fertile land, abundant forestry and water resources and potential presence of minerals of high value. The economy has a near complete dependence on oil with an underdeveloped agriculture sector, near absence of any infrastructure, manufacturing and a nascent services sector. The agriculture sector including forestry, livestock and fisheries is estimated to comprise about 15% of the GDP of South Sudan in 2013 with nearly 80% of the population being dependent upon it.

As a newly independent country, South Sudan has a historic opportunity to pursue a sustainable development pathways powered by renewable energy sources. It can learn from the mistakes of other developing countries and in this sense enjoys a late comer's advantage. However, despite the immense potential for renewable energy generation in the country, there are practically no significant initiatives which can demonstrate practical and cost effective applications of renewable energy solutions for the diverse, multifaceted socio-economic needs for electricity generation in the country.

South Sudan has an estimated population projection of around 12 million, it is covered by land surface of 644,329km<sup>2</sup> yet only has a population density of 18 people per square kilometre. Of the remaining population 50% is below the poverty line and rely mainly on firewood. According to the National Baseline Household Survey of 2012, over 96% of the population use firewood or charcoal as the primary fuel for cooking (which typically constitute 90% of the energy used in a rural household).<sup>1</sup> South Sudan's natural forests and woodlands cover 191,667 square kilometres as per the estimates carried out in 2009. There are 86 national forest reserves, covering some 188,000 hectares. The rich forest wealth is however, rapidly being depleted with an alarming rate of deforestation estimated at 5 percent annually as such the country is losing 2,776 square kilometres of forests per year. A key reason behind the rapid rate of deforestation is the relentless exploitation of forests and trees as a source of energy in the absence of alternative energy sources.

The recently signed peace agreement inter-alia, has the critical aim to support the safe, voluntary and dignified return of over 1.6 million. Internally Displaced Persons (IDPs) persons to the places of return and provide support including on economic activities, restoring livelihoods and social services such as health and education to the displaced communities. This provides an important opportunity to enhance access to renewable energy services linked with catalysing micro-enterprises and allied economic activities; functioning basic social services and as well as meeting the domestic needs of the households. UNDP's field assessments<sup>2</sup> show that in many of the areas, there is an acute shortage of fuel and frequent interruptions in supply which are

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<sup>1</sup> National Baseline Household Survey

<sup>2</sup> UNDP field assessments were carried out in multiple locations in 2014-15

likely to persist into the future affecting the day to day life of the communities. Decentralized renewable energy solutions offer a practical, cost effective and environmentally friendly solution to the multiple energy needs associated with safe, dignified and voluntary returns and improve the well-being of vulnerable population.

Even though South Sudan's carbon footprint and emission of green-house gases is negligible owing to the absence of any significant manufacturing activities, it is extremely vulnerable to the impacts of climate change and extreme climate linked events. For instance, some studies have estimated that the temperature rise in the country is two and a half times higher than the global average with the weather expected to become substantially warmer and drier. Cumulatively, the climate change impacts are expected to exacerbate existing household vulnerabilities and conflicts including around access and control of natural resources particularly grazing land in the dry season which is a recurrent source of inter-community conflicts. South Sudan is barely in a position to act on climate change linked impacts and adaptation needs around them in the current fiscally constrained environment.

South Sudan has the potential for stand-alone solar photovoltaic (PV) units and possibly for large-scale solar thermal generation since it experiences in average 10 hours of sunshine per day per year round. This is equally spread across the country, solar radiation ranges from 5.5 – 6.0 kWh/m<sup>2</sup>/day and proximity to the equator means long daylight hours throughout the year.

## Rationale

The rationale for the project is based on the following propositions:

- **Restoration of essential social services in selected targeted areas for returnees supported by decentralized renewable energy solutions:**

The conflict has broken down local government infrastructure in many parts of the country, especially in the Greater Upper Nile region. There is a need to support the functionality of the basic infrastructure of some of the critical government institutions such as police and prisons, schools and health facilities as a part of recovery. Access to electricity is vital to the smooth running of the health facilities viz. running the laboratories for diagnostic tests ; refrigeration for cold chain commodities such as vaccines ; emergency obstetric care and basic information technology services. Managing fuel based generators has been a major challenge due to the running costs of fuel, fuel supply shortages and lack of maintenance.

- **Re-invigorating the local economy**

The mid-December 2013 conflict witnessed the disruption of livelihoods of majority of the IDPs in the conflict affected states. The project will support activities focussing on creation of self-employment through setting up of sustainable micro and small enterprises which can be powered by renewable generation through a cash for work approach. Alternative sources of energy will decrease the rate of deforestation which is related to fossil fuel, it will also decrease the time spent by women to collect firewood and have beneficial health impacts.

## Justification

Limited access to modern and affordable energy services is an important contributor to the poverty levels in developing countries, particularly in sub-Saharan Africa. Access to modern forms of energy is essential to overcome poverty, promote economic growth and employment opportunities, support the provision of basic social services (particularly health), and, in general, promote sustainable human development.<sup>3</sup> Access to energy is also an important goal of the (Sustainable Development Goals) SDGs goal 7 "Ensure access to affordable, reliable, sustainable and modern energy for all by 2030".<sup>4</sup>

The legal framework in South Sudan encourages the use of alternative sources of energy to adapt to climate change and improve livelihoods through affordable energy. The South Sudan National Environment Policy (2015-2025) (Final Draft) also recognizes the impact of climate change in relation to renewable energy in South Sudan and as such will promote research and technologies that use alternative sources of energy in an efficient manner. The aim of the policy is to reduce dependency on biomass."<sup>5</sup> The National Environment Bill supports this initiative by requiring all individuals to phase out the use of fossil fuel and shift to using renewable sources of energy."<sup>6</sup> When access to energy is realized in an affordable manner, communities become more resilient and this contributes to building a basis for supporting livelihood initiatives, economic growth, agriculture, education, commerce and health being the key areas that contribute to overcoming poverty.<sup>7</sup>

Due to the lack of electricity, energy needs in South Sudan are predominantly met by biomass, consisting of the burning of charcoal, wood, grass, cow dung and agriculture residues. According to the National Baseline Household Survey of 2012, over 96% of the population use firewood or charcoal as the primary fuel for cooking (which typically constitutes 90% of the energy used in a rural household).<sup>8</sup> An average household in South Sudan burns about 3 tonnes of woody biomass per year for cooking, emitting nearly 2 tonnes of Carbon dioxide equivalent per year, as cooking mainly use three-stone open fires or metal stoves. Firewood is the most used source for lighting in South Sudan, used by 35 percent of population while 87% of the population use it for cooking.<sup>9</sup> Grass (15 percent) and paraffin lamps (13 percent) are the second and third most used source for lighting and 2% use generators. 27 percent of the population has no access of lighting and only about 1.2% of the population have access to grid electricity (7.1% of urban dwellers and 0.2% rural dwellers). A small proportion of the populations, 0.9%, are solar power users (2.5% of urban

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3 IIASA, [http://www.iiasa.ac.at/web/home/research/Flagship-Projects/Global-Energy-Assessment/GEA\\_Chapter2\\_development\\_hires.pdf](http://www.iiasa.ac.at/web/home/research/Flagship-Projects/Global-Energy-Assessment/GEA_Chapter2_development_hires.pdf)

4 <http://www.un.org/sustainabledevelopment/energy/>

5 South Sudan National Environment Policy 2015-2025 (Final Draft)

6 The National Environmental Bill, 2014; The Republic of South Sudan, Ministry of Justice, Laws of South Sudan

7 IIASA, [http://www.iiasa.ac.at/web/home/research/Flagship-Projects/Global-Energy-Assessment/GEA\\_Chapter2\\_development\\_hires.pdf](http://www.iiasa.ac.at/web/home/research/Flagship-Projects/Global-Energy-Assessment/GEA_Chapter2_development_hires.pdf)

8 NBI

9 UNDP Gap Analysis Report

dwellers and 0.5% of rural dwellers).<sup>10</sup> The larger percentage of population with no access to electricity also pay a high premium for alternative sources of lighting (kerosene, candles, low quality dry-cell based light emitting diode (LED) lanterns) due to frequent, small volume purchases and poor distribution networks that add a huge overhead to the price.

Only a small part of the population has access to grid electricity. These who have electricity are mainly in Juba, the capital city of the Republic of South Sudan, with the remaining in the towns of Wau, Yei and Renk. Previously, Malakal was supported through electricity from Sudan but this was destroyed during the 2013 conflict. The only available network is in three isolated distribution systems located in three urban centres of Juba, Wau and Malakal totalling about 15 km of 11 kV lines plus some electrified commercial centres. Apart from the three (3) government-run distribution networks mentioned above, there are also donor funded (NRECA/USAID) mini-grids in the towns of Yei (1.2 MW), Kapoeta (0.8 MW) and Maridi (0.8 MW). Installed capacity for the South Sudan is about 30 MW of which about 22 MW is currently operational consisting exclusively of thermal generators (diesel and heavy fuel oil).

Per capita electricity consumption in South Sudan is about 1 - 3 kWh, the lowest compared to the rates in its neighbouring countries. The average per capita electricity consumption in the Sub – Saharan Africa is about 80 kWh.<sup>11</sup> Those who are connected to the grid pay a high cost for the service with household connection costs of \$500-\$600 and average tariff of US \$0.25/kWh. This is twice the average African consumer pays, five times what is paid in other developing countries and more than double the amount of Sudan.<sup>12</sup> The current demand for electricity is estimated at 300MW of which is expected to rise to over 1400MW by 2030.

The 2013 conflict in South Sudan reversed the progress that was being made towards delivering essential social services to local communities. Most government infrastructure in the former Upper Nile State and Unity State were destroyed by both parties to the conflict, leaving communities without access to basic services also lacking the human capacity. The conflict exacerbated the already weak indicators in South Sudan. Prior to the conflict, healthcare was extremely difficult to access in South Sudan, with an estimated 0.15 doctors per 10,000 patients and 0.2 midwives/nurses per 10,000 people.<sup>13</sup> The health sector in particular suffered due to the lack of good health facilities, equipment and above all due to lack of predictable power supply without which the services cannot be delivered. Maternal Mortality rate is at 135 per 1000 live births and a woman in South Sudan has a one in seven chance of dying during one of her pregnancies or childbirth.<sup>14</sup> Limited access to water and sanitation has contributed to poor child health – a third of children under the age of five suffer from diarrhoea. Water has also been a source of much of the internal conflict between communities due to the limited number of water

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10 Lighting Africa, 2013

11 SE4ALL

12 Lighting Africa, 2013

13 Reliefweb, 2106 <http://reliefweb.int/report/south-sudan/2016-south-sudan-humanitarian-needs-overview>

14 Downie, 2012

points during the dry season. Currently 30% of the population, mainly in arid regions of Eastern Equatoria, Upper Nile and Unity State is without access to water.

In South Sudan, 90% of the population relies on biomass sources (charcoal and fuelwood) for cooking and heating. The lack of affordable and modern forms of energy has impacted on agricultural and economic productivity, health and opportunities for income generation and generally to improving conditions.

Women are the bread winners of most families in South Sudan and they account for 60% of the total population. Significant gender gap exist as women bear the multiple burden of care including walking long distance of around 2-10 km to collect firewood, collecting water (which increases to around 10 km in the peak of the dry season), undertake subsistence agriculture while also raising children. Wider access to cleaner and affordable energy options can improve gender parity, health indicators and school enrollment of girls. For example, access to cleaner energy options (electricity for lighting in schools and cleaner cooking fuels at home) can extend studying hours for girls by reducing the time they spent collecting fuel.

Access to uninterrupted supply of energy in health facilities can save lives by providing much needed medical attention during delivery, incubation unit for newborns and operations to save lives. Access to pumped water can reduce the time that women and girls spend carrying water for household use. Gender equality and empowering women are important issues because they foster progress toward other development outcomes, such as reducing poverty, hunger, and disease and improving access to education and maternal health for the entire families and communities.

The recently signed peace agreement requires the parties to set-up a Transitional Government of National Unity (TGoNU) for a period of 30 months, this period is considered critical phase especially for stabilisation and recovery of the conflicted impacted region. South Sudan has an opportunity to tap into alternative sources of energy to enable recovery and stabilization and transform the recovery period into long-term development and well being of the beneficiary communities.

### The Proposed Pilot Project

South Sudan has a potential for powering its growth and deliver basic social services through decentralized renewable energy sources including solar, hydro and wind. Under the rural electrification section of the National Electric Sector Policy, ROSS plans to improve access to electricity through extension of grid networks, construction of isolated grid systems powered by thermal and small hydroelectric plants, and implementation of solar powered systems.

Amongst the renewable energy generation resources in South Sudan, solar energy has good prospects. The country has potential for stand-alone solar photovoltaic (PV) units and large-scale solar thermal generation as well. Across the country, solar radiation ranges from 5.5 – 6.0

kWh/m<sup>2</sup>/day and proximity to the equator results in long daylight hours throughout the year. In particular, the north-eastern part of the country experiences approximately 12 hours of sunshine per day year round.<sup>15</sup>

The project aims to develop a pilot project to demonstrate the multiple advantages of using solar energy options in poor rural communities including the IDPs who have lost their income generating asset base. The pilot project will involve the use of solar energy and biogas as alternatives sources of energy for South Sudan. The solar pilot project will be conducted in 20 counties located across the country Fmr Upper Nile State; Fmr Unity State; Fmr Bahr El Ghazal ; Fmr Central Equatoria and Fmr Eastern Equatoria. The sites will be selected on the basis of criteria of hosting IDPs; potential sites of IDP returns and sites in dire need of sustainable income generation activities through renewable energy sources. The pilot project will also involve conducting awareness programmes on the potential of renewable energy for development in South Sudan.

## Project outputs, activity results and indicative activities

### Output 1

**Enhance critical government institution service delivery and community resilience through access to alternative energy.**

**Activity Result 1: Provide access to renewable energy to support productive community infrastructure as an recovery support**

The project aims to supply water and power to community centres through solar power driven systems. The solar-powered submersible water pumps will be installed in the vicinity of school locations to provide access to water and sanitation to the communities and to the students. Alternative water points will also be included in the pastoral zones. The solar-powered water systems pump approximately 90,000 litres of water every hour, guaranteeing the population adequate and predictable supply of water. In the event of fluctuating supply during rainy season, backup generators can be provided. Within each site a distribution network using water tanks can be developed to supply a 30% of the county with water.

The project aims to support existing community resources centres with solar power. It will complement community centres that have been constructed by other agencies. Community resource centres serve as safety zones for communities affected by violence, rape and abuse. These centres can be used by the communities to hold meetings; workshops and training programmes and as peacebuilding and reconciliation centres. The centre will be operated by trained women from the communities with a nominal user fee charged towards its maintenance

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<sup>15</sup> Source: Lighting Africa - International Renewable Energy Agency, Concentrated Solar DNI Map for Multiple Countries at 40km



and sustainability. The project is estimated to target 50,000 persons across the different locations. It proposes to support 20 community centres across 20 locations.

Targets: Schools; community resource centre; police station (across 20 counties)

Indicative Activities:

- a) Install solar supported submersible pumps in 20 schools across 20 counties;
- b) Install solar-panels and associated infrastructure in 20 community centers across 20 counties;
- c) Train maintenance staff (40 person) on routine maintenance and operation of solar panels.

### Activity Result 2: Increased access to energy for improved essential health services

It is proposed that the project provides solar energy to primary and secondary health care facilities in selected locations to support critical health services such as reproductive health; maternity ward; incubation room and essential storage facilities. The support to health facilities includes 5 hospitals across five state locations and 2 health facilities within two counties per state. The project will benefit at least 40% of the county population being served in 5 large hospitals in each state, while supporting over 50% women and children per county health facility per state. Depending on the type of solar panel, a single panel can generate an average of 1kwh.

Target : Health facilities

Indicative Activity:

- a) Install solar power and associated infrastructure in five hospitals (maternity ward; premature infant incubation unit; medicine refrigerators; laboratory services; mortuary)
- b) Install solar power and associated infrastructure in 20 health centres across 20 counties (maternity ward; premature infant incubation unit; medicine refrigerators; laboratory services; mortuary)
- c) Train (40) maintenance staff routine maintenance and operation of solar powered systems

### Activity Result 3: Enhance sustainable livelihoods through solar-powered income generation activities

Income generation activities are essential to building resilience and restoring the community asset base. Under the project, two areas of support have been proposed. 20 solar powered bakeries will be constructed proposed to be operated by 20 women and youth beneficiaries per bakery across 20 locations. Secondly, the construction of group-based solar powered freezers in fisheries locations will be set up for storage and selling fresh fish in consultation with the communities and local authorities. Currently, an estimated 40% of the fish are spoilt due to lack of cooling facilities.

Sustainability of these interventions will be built into the design of the programme interventions so that user fees can be collected to conduct routine maintenance and operation of the facilities.

Target : Community livelihoods project

Indicative Activity:

- a) Building a central solar-powered community zone with a bakery across the 20 counties
- b) Construction of fish cold storage units across 20 counties
- c) Training 200 women and youth on the utilization of the solar-powered bakery (20 counties);
- d) Training 200 youth (fishermen) on cleaning and preparing fish for cold storage (20 counties);
- e) Training 100 (50 women) and youth on management including financial management;
- f) Setting up a sustainability fund and user-fee for the utilization and maintenance of the facility.

## Output 2: Support alternative sources of energy to mitigate climate change

### Activity Result 1: Increase alternative access to energy through biogas digesters in prisons

Biogas sanitation systems are seen as a promising technology for institutional settings of developing countries as they combine effective treatment of human excreta and kitchen waste, while at the same time generating a renewable fuel source for cooking and a nutrient-rich fertilizer. In South Sudan, the potential of introducing biogas digesters as an alternative source of clean energy and avoiding the use of charcoal, exists in prison facilities. It is estimated that a prison with 200 detainees needs a 20m<sup>3</sup> digester. The approximate average biogas consumption rate per (household-sized) stove is 400 L/h while a prisoner produces 61.9 L/person/day, therefore waste from 6 prisoners can supply the stove.

The gas is made out of 70% methane, 25% carbon dioxide with remaining 5% composing other gases.<sup>16</sup> The aim is to reduce firewood use for cooking in the prisons by up to 40%. Currently, the prisons use over 50 tonnes of firewood per year to cook for 400 prisoners.<sup>17</sup> Biogas is considered as a better solution to reduce the rate of deforestation and reduce the amount of released human waste. The remaining waste from the biogas digester will be used as fertilizers and sold to farmers or used in the prison-farming project. Research will be conducted to understand community buy-in of the project as social settings can vary. The project will be piloted in Juba Prison, being the largest prison in the country and it will support an estimated 2,000 convicted prisoners, awaiting trial detainees, juveniles and mental patients.

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<sup>16</sup> ICRC

<sup>17</sup> SE4ALL

Target : Prisons

Indicative Activity:

- a) Construct 5 biogas digester made from local building materials based on feed from 300 detainees (30m<sup>3</sup> digester);
- b) Training prison wardens and detainees on constructing biogas digesters;
- c) Combining human waste, kitchen waste and animal dung as input into the digesters;
- d) Package the remaining fertilizers for sale to farmers; and
- e) Construction of storage for packed fertilizers

### Expected Impact

**Output 1:** Enhance critical government institution service delivery and community livelihood and resilience through access to alternative energy.

- 1) Improved government institutions service delivery.
- 2) Expanded health care services.
- 3) The capacity of communities to take up additional alternative livelihoods or add value to existing ones towards improvement in their livelihoods is strengthened.
- 4) Increased yield of sellable catch by up to 50% through drastic reduction in spoilage
- 5) Increased income for fishing communities thanks to improved value of fish catches and opportunity to export

**Output 2:** Supporting alternative sources of energy to mitigate climate change

- 1) Reduced quantity of firewood by 40% in prison
- 2) Provide an alternative source of waste management
- 3) Supply fertilizers to improve agriculture yield

Budget:

Output 1: Enhance critical Government Institutions for service delivery			
Activity Result 1: Provide access to energy to support basic service delivery as a recovery stabilization plan 50 KWH			
Year	2016	2017	Total
1. Install submersible solar water pumps in schools (20 schools in 20 counties)	4,000.00	4,000.00	8,000.00
2. Install solar power in existing community resource centers (20 counties); 2kWh per center; 3 solar panel per centre; 2 solar-charged batteries per center; 1 inverter per centre)	142,000.00	10,000.00	152,000.00
3. Install solar panels and associated infrastructure in 20 police stations across 20 counties;	142,000.00	10,000.00	152,000.00
4. Train maintenance staff on routine maintenance and operation of solar panels (40 persons-2 per location)	5,000.00	2,500.00	7,500.00
	293,000.00	26,500.00	319,500.00
GMS 8%	23,440.00	2,120.00	25,560.00
Activity 1 sub-total	316,440.00	28,620.00	345,060.00
Activity Result 2: Increased access to energy for improved health services			
1. Install solar-panels on the roofs of 10 state level hospital (10 panels per hospital covering 200 beds) covering (maternity ward; premature infant incubation unit; medicine refrigerators; laboratory services); 100kWh of energy;	80,000.00	10,000.00	90,000.00
2. Install solar-panels on the roofs of county health facilities in 20 counties; (5kWh; 6 solar panels per health facility; 2 batteries per facility; 1 inverter per facility)	160,000.00	10,000.00	170,000.00

3. Train maintenance staff on routine maintenance and operation of solar (40 persons – 2 per facility);	10,000.00	5,000.00	15,000.00
	250,000.00	25,000.00	275,000.00
GMS 8%	20,000.00	1,750.00	19,250.00
Activity 2 sub-total	270,000.00	26,750.00	294,250.00
<b>Activity Result 3: Enhance sustainable livelihoods through solar-powered income generation activities</b>			
1. Building a central solar-powered bakery (1 per county for 20 counties)	100,000.00	10,000.00	110,000.00
2. Construction of fish storage (1 per county in 20 counties)	100,000.00	6,000.00	106,000.00
3. Training 200 women and youth on the utilization of the solar-powered bakery (20 per county)	20,000.00	3,000.00	23,000.00
4. Training 200 youth (fishermen) on cleaning and preparing fish for cold storage (20 per county)	20,000.00	3,000.00	23,000.00
5. Training 100 (50 women) and youth on financial management (5 per county)	10,000.00	3,000.00	13,000.00
6. Training maintenance staff on repair and cleaning of solar panels (40 persons - 2 per county);	10,000.00	2,000.00	12,000.00
7. Setting up a sustainability fund and user-fee for the utilization and maintenance of the facility	5,000.00	-	5,000.00
	265,000.00	27,000.00	292,000.00
GMS 8%	21,200.00	2,160.00	23,360.00
Activity 3: sub-total	286,200.00	29,160.00	315,360.00
<b>Output 2: Supporting alternative sources of energy to mitigate climate change</b>			
<b>Activity Result 1: Increase alternative access to energy through biogas digesters in prisons</b>			
1. Constructing biogas digester made from local building materials feeding from 300 detainees (30m3 digester); 5 digesters	4,000.00	1,000.00	5,000.00
2. Training prison wardens and detainees on constructing biogas digesters	15,000.00	5,000.00	20,000.00
3. Combining and collecting human waste, kitchen waste and animal dung as input into the digesters	4,000.00	4,000.00	8,000.00
4. Package the remaining fertilizers for sale to farmers	6,000.00	6,000.00	12,000.00

5. Construction of storage for packed fertilizers	1,000.00	1,000.00	2,000.00
	30,000.00	17,000.00	47,000.00
GMS 8%	2,400.00	1,360.00	3,760.00
Activity 1 sub-total	32,400.00	18,360.00	50,760.00
Activity result 2: Project Management Cost			
1. Project manager (NOB)	80,000.00	80,000.00	160,000.00
2. 2 Project associates ( 1 M&E; 1 Finance)	100,000.00	100,000.00	200,000.00
3. 2 Drivers	35,000.00	35,000.00	70,000.00
4. Project Administration (Audits)	10,000.00	10,000.00	20,000.00
5. Project Management including (M&E)	15,000.00	15,000.00	30,000.00
6. Situation analysis-community consultation	35,000.00	10,000.00	45,000.00
7. Supplies (computer, stationeries, printers)	30,000.00	30,000.00	60,000.00
8. Equipment and furniture (procurement of bio-digester; baker equipment; safety materials; freezers)	703,000.00	10,000.00	713,000.00
9. Trainings , safety materials, financial management	50,500.00	2,500.00	53,000.00
10. Travels	55,000.00	55,000.00	110,000.00
11. Contractual service-companies (bore-hole drilling, submersible pump, construction of facilities, transport)	850,000.00	5,000.00	855,000.00
12. Logistics (Imports and Transportation of Items)	545,000.00	5,000.00	550,000.00
13. Contractual services-individual	50,000.00	50,000.00	100,000.00
14. Workshops and Conference	60,000.00	60,000.00	120,000.00
	2,618,500.00	467,500.00	3,086,000.00
GMS 8%	209,480.00	37,400.00	246,880.00
Activity 2 sub-total	2,827,980.00	504,900.00	3,332,880.00
	<b>3,733,020.00</b>	<b>607,790.00</b>	<b>4,338,310.00</b>