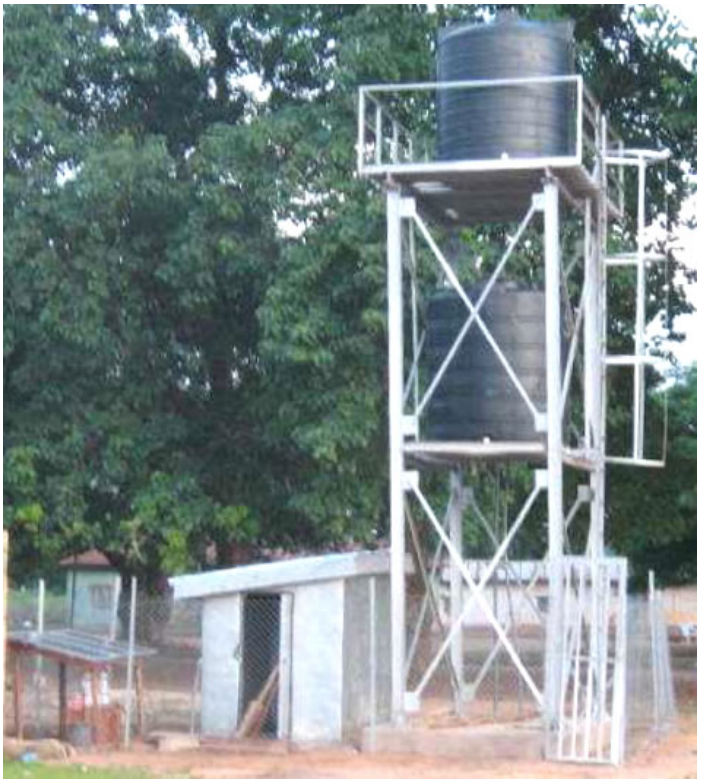
Eindverslag Watertoren Namu 2009



Bestuur SALEK
November 2009

Inhoudsopgave

1. Water in Namu

Namu
Namu is een dorp midden in Nigeria, met ongeveer 25.000 inwoners, waarvan 12.000 onder de 18 jaar oud. Het dorp ligt relatief geïsoleerd en leeft van de landbouw Namu probeert (een deel van) de vele kinderen basisonderwijs te bieden ten behoeve van een beter leven. Echter, de beperkte schoolfaciliteiten zijn in zeer slechte staat. Reden voor Stichting Salek om Namu te ondersteunen bij het verbeteren van hun onderwijs.

Eén van de eerste zaken waar we in dit nieuwe project aan zijn begonnen is water. Water is de meest belangrijke stof die er op de aarde te vinden is. Zonder water is er geen leven mogelijk. Het menselijke lichaam bestaat zelfs voor 70% uit water. Zonder water kunnen we geen fatsoenlijke drinkwater- en sanitaire voorzieningen verzorgen voor de 2.300 leerlingen in de school. Bovendien is water noodzakelijk voor de bouw van de school, omdat de specie aangemaakt moet worden met water.

Korte omschrijving project
De enige natuurlijke watervoorzieningen in Namu waren wat oppervlakkige waterbassins, waarin tijdens het regenseizoen water in wordt opgeslagen. Deze bassins liggen ter hoogte van de zelf gegraven toiletten en men heeft weinig fantasie nodig om te bedenken wat de gevolgen daarvan zijn. Soms worden er tankwagens ingereden die tijdens droogte de bassins met water vullen. Dit is betaald water, maar de kwaliteit in de open lucht neemt heel snel af. Er is slechts zelden drinkwater beschikbaar in Namu.

De afgelopen maanden is een watertoren in Namu geplaatst, na zorgvuldige metingen om de beste plaats te bepalen.
Het resultaat is een watertoren met een tankcapaciteit van 14.000 liter. Het water wordt opgepompt vanuit 74 meter diepte door een pomp die werkt op zonne-energie. Daartoe zijn zonnepanelen geplaatst.
Het project heeft uiteindelijk €2.000 meer gekost dan begroot, omdat:
- een koersstijging van gemiddeld 21%;
- er aanzienlijk dieper geboord moest worden dan voorzien (74 i.p.v. 50 meter);
- wijziging van het plan van twee tanks van 7.500 liter, naar drie kleinere tanks, omdat het niet paste op de geplande toren;
- internationale overboekingkosten, zowel aan Nederlandse, als aan Nigeriaanse kant, die niet waren begroot.

Efli, de Nigeriaanse partnerorganisatie van Salek, heeft de bouw van de watertoren begeleidt en toezicht gehouden. Efli heeft het verloop van de metingen, boringen en bouw t.b.v. de watervoorziening in beeld gebracht in hun Report, hun verslaglegging aan Salek. We hebben dit verslag toegevoegd als bijlage.
Wij gaan ervan uit dat deze bijlage voldoende informatie geeft over het verloop van de bouw. Daarom gaan wij daar niet meer afzonderlijk op in.

Effecten

Met de gebouwde watertoren kan de huidige school en de nieuw te bouwen school voor 2.000 kinderen ruimschoots worden voorzien van schoon drinkwater en water voor de nog te bouwen sanitaire voorzieningen. Tevens zal het water gebruikt worden voor het aanmaken van het cement t.b.v. de bouw van de school.
Er is, zeker nu de school nog niet gebouwd is, een overcapaciteit. Deze overcapaciteit wordt verkocht aan de bevolking van Namu en de omliggende dorpen. De opbrengsten van deze verkoop worden gebruikt voor het onderhoud van de watertoren. Op deze manier is de voorziening 'self-supporting'.

Tijdens de bouw van de watertoren zijn enkele dorpsbewoners betrokken bij het werk. Dit levert niet alleen lokale werkgelegenheid op, maar deze mensen hebben gaandeweg geleerd hoe de toren in elkaar zit en op welke wijze deze is te onderhouden, repareren en af te stellen. Voortaan heeft Namu de know how en de handjes voor het onderhoud zelf in huis!

2. Financiële verantwoording

De oorspronkelijke begroting voor de watervoorziening bedroeg €12.865, en is overschreden met €2.000 tot een benodigd budget van €14.865, of te wel 3.054.600 Naira. De opbouw van de daadwerkelijke kosten vindt u in bijlage 1.
De budgetoverschrijding is bekostigd door de inzet van een groter aandeel van de opbrengst van de kerstmarkt in Rheden.

Opbouw baten watervoorziening	
Aqua for All	€ 4.009
Nederlandse ambassade	4.800
Rabobank Share4more	1.634
Studenten HES Amsterdam	705
Donateurs	300
Kerstmarkt Rheden	3.417
Totaal	*€ 14.865*
	N 3.054.600

Bijlage: Report Efli

REPORT ON THE PHASE 1 OF THE RE-BUILDING OF THE SCIENCE PRIMARY SCHOOL, NAMU (THE WATER PROJECT)

PREPARED AND SUBMITTED BY:

EDUCATION FOR LIFE INITIATIVE
(SUITE A19, NKWEGU PLAZA, PLOT 1078, GARKI, ABUJA)

TO

SALEK, THE NEDERLANDS
(SEPTEMBER, 2009)

1.0 ORGANISATIONAL INFORMATION

Education for Life Initiative is a Non-Governmental Organisation setup to improve lives of Nigerians through sharing of qualitative education with stake holders. Its mandates are also geared towards the improving structures that enable capacity building and utilization by providing, where needed, the required infrastructure.

The organisation was set up and registered by the Nigerian Corporate Affairs Commission in 2008 with three board members and has since then identified and has commenced re-building of two primary schools at Namu in Plateau State. This project was the first to be executed by the organisation. SALEK, The Netherlands has assisted the organisation to raise funds for the first phase of the project which is the provision of portable water system for over two thousand school children. The organisation has been assisted with funds and it has completed the first phase of the re-building by providing 15,000 litres capacity plastic tanks mounted on a metal overhead tower being fed by a 74m borehole powered by a solar power supply. The project was valued at over N3,000,000.00 (Three Million Naira). It was entirely supported by SALEK, The Nederlands. The project was listed as one of the projects co-funded by **Aqua4All, the Dutch Embassy and the Rabobank** (http://www.akvo.org/rsr/project/39/, http://www.salek.nl).

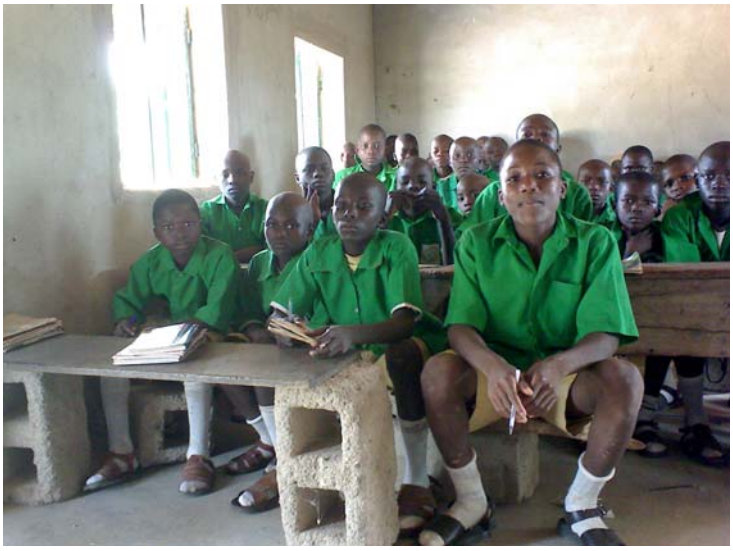
The remaining project valued at over N55,000,000.00 is still being expected to commence soon as funds are available.

2.0 PROJECT DESCRIPTION

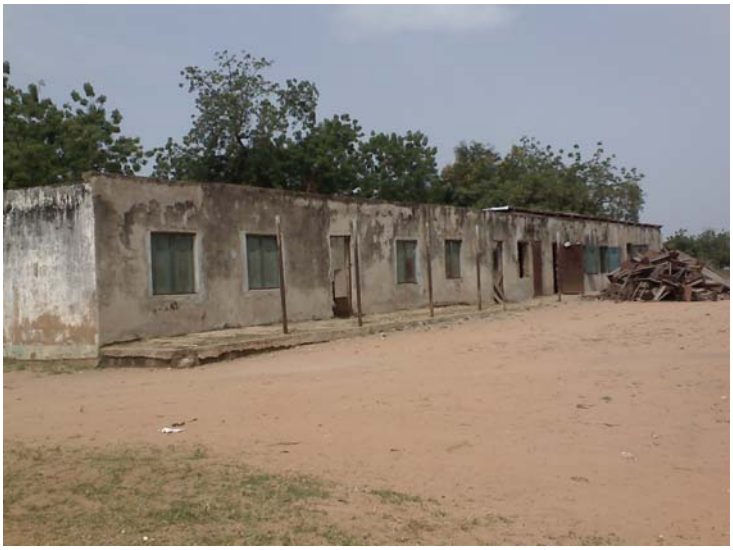
SALEK, The Netherlands and **EFLI, Abuja** agreed to re-build a school, Science Primary School Namu after an inspection of two schools in which over 2000 (two thousand) children were attending. It was found that the children were attending school under the lowest standards as some of them were studying under trees, and also in classrooms that had their roof partly blown off. It was further observed that the sanitary conditions of the two schools were very poor and capable spreading disease. These conditions were seen to be un-conducive for learning and may be responsible for the poor literacy in the area.

Background studies indicated that only a few of the children who complete studies from these schools are able to go to secondary schools and eventually to the university.

Pic.1: A class under the tree



Pic. 2: Children in Class



Pic. 3: Classrooom Block with Blown Roof top

Having agreed to rebuild the school, the site of the project was selected after several meetings with the members of the community and the teachers of both schools where SALEK was in attendance in most of the meetings. This site selected was preferred because of its relatively centralized location in the village and also its land area. The object of the project was to achieve the following:

a. Conducive Learning Environment for the over two thousand children
b. Provision of clean and portable drinking water
c. Provision of Toilet facilities to promote sanitation amongst the children.

Because of the large extent of coverage of the project, the three different categories listed above were selected to be carried out in phases. Based on this, the water which we considered the priority of the project was selected to be the first phase of the project.

To facilitate the execution of the project, a project committee was setup which comprised mainly of the teachers of the two schools whose mandate was to help in monitoring the project since they are the first point of contact.

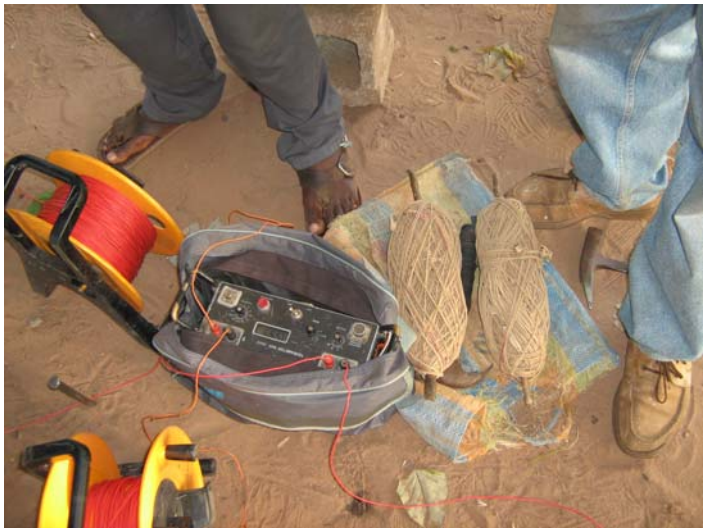
3.0 THE WATER PROJECT

Having considered the number of children attending the school, we proposed SALEK and jointly agreed to build a water supply system with the following specifications.

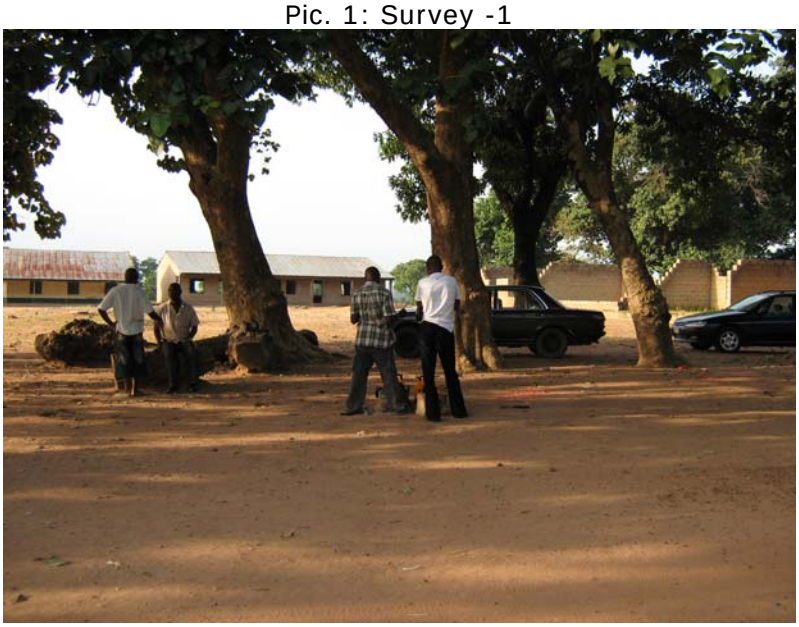
a. **14,000 Litre capacity tanks:** 14,000 litres was accepted to provide enough water for the school children and also to serve the immediate local community. The plastic tanks were preferred because of the apparent reason that they are not affected by rust, its long lifespan and its low cost of maintenance, if any.
b. **6 metre metal tower:** The six meter height of the metal tower was selected to be able to supply water to the one storey classroom blocks
c. **80 metre borehole:** An initial projection of 50 Metre depth was proposed but 80 metre was adopted after two surveys were carried out.
d. **3KVA Solar power supply for the borehole pump:** A 3KVA solar power supply was adopted for use to drive the pump. Solar power was the preferred option since it requires less running costs if any.

4.0 NATURE OF EXECUTION OF THE PROJECT

The first task of the project was the survey of the land area to establish the location of the borehole and subsequently the water tower. Two surveys were carried out where **Aqua for All** vetted and made recommendations. The initial projection was for 50 Metres but after the surveys were carried out, it was recommended that 80 Metres would be most appropriate since the survey showed a “Low-Medium” yield.



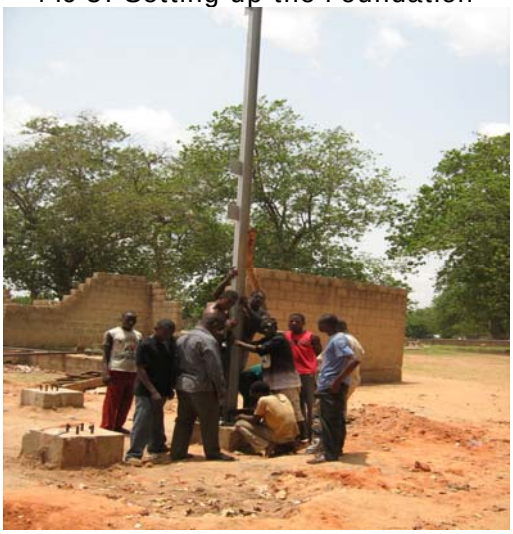
Pic. 1: Survey -1



Pic. 2: Survey – 2

Building of the water tower commenced immediately afterwards. Direct labour method was adopted for building of the tower. One Engineer was employed to make the design and implement the building of the tower. All workers were sourced locally from the village and were supervised strictly to achieve the design. In the process, the two village technicians were taught basic skills in measurements and construction which they lacked knowledge of. Other categories of workers that were employed included builders and metal benders who built the foundation upon which the water tower was mounted. Other casual workers were also used for jobs that did not require any skills.

Pic 3: Setting up the Foundation

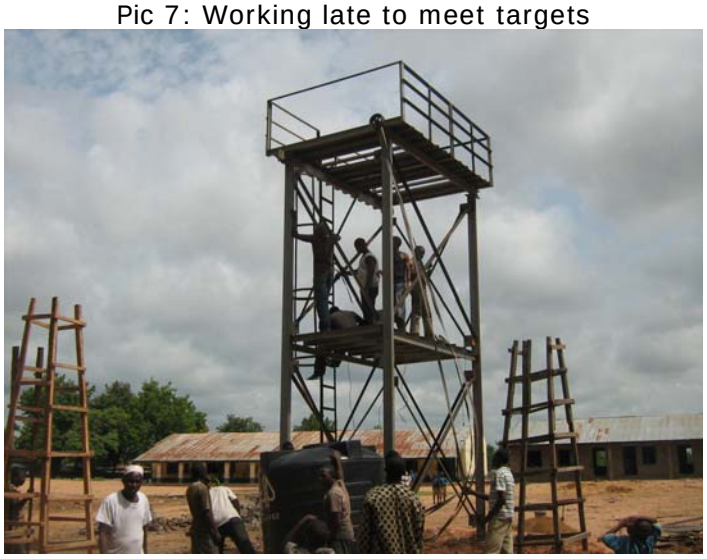


Pic 4: The first metal column to be mounted

Pic 5: Tower in Progress

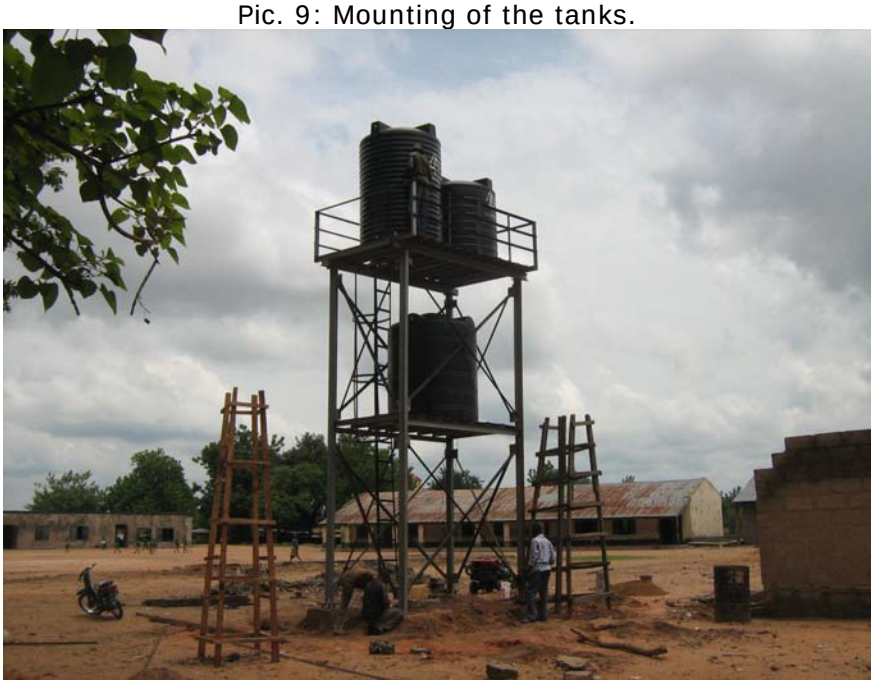
Pic 6: Tower 70% completion

Pic 7: Working late to meet targets



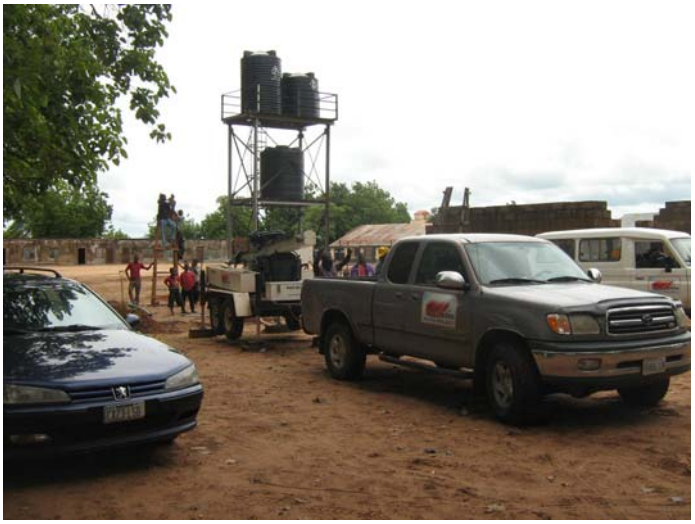
Pic 8: Tower Completed

Pic. 9: Mounting of the tanks.



Pic. 10: Tower completed with 14,000 litres capacity tanks Mounted

With the completion of the tower with fencing around it, the borehole drilling commenced which lasted a period of 4 days to attain a comfortable depth of 74 metres which was said to be having a high yield.



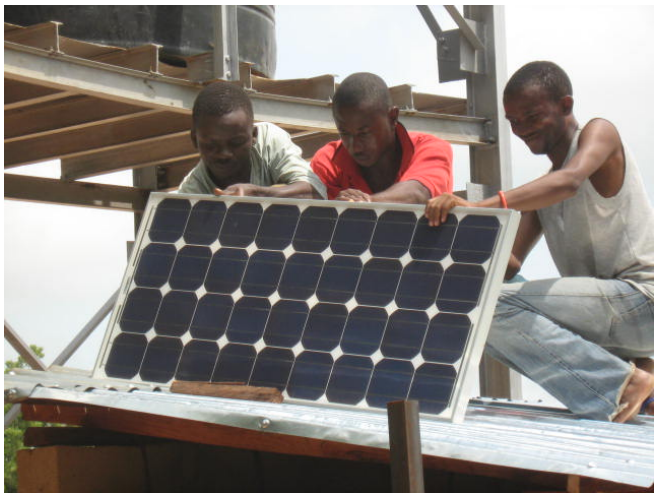
Pic. 11: The Solar Power

Having completed the tower and the borehole, the next was the installation of the solar power which comprised mainly of three components

a. the solar panels
b. the inverter
c. the batteries.

The solar panels were used primarily as the battery charger to charge a battery bank which in turn supplies the a DC input to the inverter. The inverter primarily converts the DC voltage to an a.c voltage. The inverter is capable of sustaining a continuous load of 3000W and a surge load of 6000W. Since this is powering a pump of a bout 1000W, the power is more than sufficient. This installation was also done and completed. An equipment room where the solar equipment were housed was also built to secure the solar power equipment.

Because of the possibility of low sunlights or the possibility of draining up the batteries during heavy usage, we included an alternate point where a standby generator could be used to supplement the solar charging.



Pic. 12: Solar installation in progress

Pic. 13. Electrical Connections

Pic. 14. Wooden Platform being built

Pic 15: Mounted Solar panels

Pic 16: Installed Solar

Pic. 17: Inverter with batteries powering a lamp

Pic 18: Completed Project.

5.0 FINANCIALS

Expenses:

	Description	Amount (N)	Remark
1	Preliminaries	118,000.00	Includes two surveys
2	Plastic Tanks	210,000.00	3 No. Plastic Tanks
3	Steel Works	402,100.00	Main Parts of metal tower
4	Fencing	24,500.00	Wire mesh fencing
5	Plumbing Materials	28,900.00	Plumbing
6	Paint	27,000.00	Aluminum Paint
7	Earth Works	113,550.00	Excavation /Foundation for Tower
8	Borehole	940,000.00	74 metres depth
9	Solar Panels	255,000.00	3 No. Solar Panels
10	Batteries	240,000.00	4 No Deep Circle Batteries
11	Inverter	150,000.00	2.5KVA Su Kam Inverter
12	Control Room	90,000.00	-
13	Electrical parts	6,500.00	- Electrical wiring
14	Wooden Platform	12,500.00	- Platform for the Solar Panels
15	Workmanship	15,000.00	- Electrical Works
16	Workmanship	385,550.00	- All works on tower building
17	Miscellaneous	36,000.00	
	Total	**3,054,600.00**	

Income (Naira):

Description	Amount (Naira)
Received in 2008 for Survey	110,000.00
From Netherlands Embassy	661,600.00
Naira Received (April 2009)	1,850,000.00
Additional Money From SALEK (June 2009)	466,000.00
Total	3,087,600.00

Available Balance:

Total Remaining Naira:	N33,000.00
Total Remaining Dollar:	$200.00

A sum of Three Million Fifty Four Thousand and Six Hundred Naira was expended on the project. The water project has been tested and is working.

Doxology

The Board Members of Educaton For life Initiative on behalf of the School Building Committee, the entire primary school children and the Namu Community wishes to immensely thank particularly SALEK, The Netherlands for their concern over the conditions under which our children are studying and finding it worthy of their time, money and affection.

We also wish to thank all those that participated in the realization of this phase of the project especially the Royal Ducth Embassy from whom we received directly money for this project.

And we wish to thank Aqua4All, Share4More (Rabobank) and the village church in Rheden.

Finally, as we go into the second stage of the project, we still solicit your help and commitment.

Thank you.

Your Faithfully,

Datong, Dominic Gwaman – Board Chairman
Dinak, Martins Davugun – Board Secretary
Damen, Joseph Magun – EFLI Image Maker
Damulak, Jafaru - Patron