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TECHNICAL PROGRESS REPORT

MBOLO ASSOCIATION

Ministry of Energy

NATIONAL ENVIRONMENT AGENCY N.E.A.

UNIDO

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1 OBJECTIVES OF THE WORKSHOP

The main objective is to incentivate women to start science training, especially on RE. The workshop has a technical base but it's focused on hands-on orientated to the creation of greenjobs under RE with knowledge trained.

The workshop will provide, in its first stage a practical introduction on basic concepts on electrical systems, that after completing the full course it must be possible to understand a small electrical installation whereby the student can identify the different parts of the installation. Also it will be possible to design a small household system, either grid-connected, powered by an alternative power source or renewable energy.

The second stage is a renewable Energy workshop about design, installation and maintenance but more practical than the last edition done in October 2012 focused and delivered like the first stage, basic concepts on electrical systems.


2 METHODOLOGY

The workshop is design under the needs of African youth women in order to motivate them for technological knowledge. A practical workshop, focused on hands on, it's the one selected. More than 80% of the time, is practical or field visits. All theory given will be handed on printed documentation.

The workshop is designed under two practical modules separated on time. The first one is the electrical module done in July (from 21-26th of July 2014). This basic knowledge is required for the second module, that will be done in October, for renewable energy focused on a domestic PV standalone system.

Also, the stand-alone electric system at the Fandema Center will be used to show how a hybrid system (off-grid PV, Grid-connected PV and Wind power) should be installed and how all components should be configured in order to work together.

In each module, hands on to apply the knowledge gained will be done. An electrical system will be done and a household RE system will be implemented by the pupils. It will also help to evaluate the knowledge gained by the pupils.


3 TEAM AND TRAINER

The design and coordination of the workshop has been done by Mbolo Association staff. The same with the administration and secretarial job during the workshop. Another highlighted issue, is that Mbolo has done all the transportation of the participants from Fandema site to Turn Table. This issue allowed us to reduce the workshop expenditures by not including the expenditures and continue to Mbolo's policy of assisting to the Gambian motivated and eager learners with good quality of education and training at low or no-cost.

Mbolo has hired the services of one electrical and electrician engineer with vast knowledge and experience on electricity training, Mr. Moses Campbell.

4 OPENING CEREMONY

More than 50 people attended the opening ceremony that was held on the 21st of July 2014 at Fandema, Tujereng Village, The Gambia. One week before, invitation mails were distributed by UNIDO's PMO and also from Mbolo's side to the authorities with a close a follow-up by Fandema team.

Tujereng Alkalo, Mr. Karamo S Bojang, welcomed the participants stressing the importance of education for the country's development and community of Tujereng, like President Mbolo Association, Malang Sambou, with his hands on RE training this year a group of 7 women has been the driving force behind this initiative, giving a warm welcome to the participants and thanking the support of partners in the development of RE in the Gambia.

Ndey Bakurin, the Chief Director of NEA (National Environmental Agency) and the Minister of Energy, Hon Dr. Edward Saja Sanneh, have highlighted the country's major commitment to renewable energies and specially, congratulated Mbolo Association for Fandema project. Besides having an environmental aspect harmoniously combines the social aspect fostering a sense of pride for the whole country of this project of all.

Johou Mr. Faal, Director General of GTTI (Gambia Technical Training Institute) has emphazised the technological training initiative to be the field of renewable energy with mainstreaming gender as a component.

Finally, thank the master of ceremony, Mr. Dodou Gaye, UNIDO National Project Manager, as a key roleplayer in the progress for renewable energy in the country and his commitment with the demonstration projects that can be viewed and succeded.

In addition, Mbolo Association, appreciates the attendance of all authorities as Sanyang Ward, the Member of Parliament of Kombo South, REAGAM, NAWEC, MOBSE, etc.. but especially to all women and organizations who believe that such training have to be held in The Gambia.

5 THE IMPLEMENTATION OF THE WORKSHOP

5.1 INSCRIPTIONS, PARTICIPANTS AND ATTENDANCE

The workshop was opened to young women who had the zeal to learn about electricity and renewable energy. In that case, the target participants were the women from Fandema (low profile in the education system, not more than grade 12) and women that are linked with energy or technology. This 24% came from Nawec, University of The Gambia, GTTI, Ministry of Energy, NYSS and Department of Community Development.

Although the training workshop was targeted for 20 women, Mbolo accepted more participants from Fandema side to help them to expand their knowledge and also work with our mission, to empower women through access to renewable energy knowledge.

5.2 GROUPS AND TIMETABLE

The first module of the workshop was conducted from the 21st to 26th of July out of Fandema yearly program to give the opportunity to assist all the women from the project without disturbing the ongoing of the skill center. It was designed to be a 5 hours training per day with a break in between (see next figure). Every day, they did a briefing lecturer introduction and then practicals working with 8 groups of two or three. However, some of the practical days, they stayed longer to end with the assessment.

First module's timetable

	Monday 21/7	**Tuesday 22/7**	**Wednesday 23/7**	**Thursday 24/7**	**Friday 25/7**	**Saturday 26/7**
9:00-9:30	Registration	PUBLIC HOLIDAY	Introduction to materials, fittings and tools	Exercise 4: Final	Hands on. Real electrical installation. Inside wall and outside wall	Field trip to electrical suppliers
9:30-10:00	Opening ceremony		Exercise 1: Installation of simple circuit on training board			Gambia Electrical
10:00-11:00						Batimat
11:00-11:30	Coffee break		Coffee break			
11:30-12:30	Introduction to Electricity: importance, brief history and sources		Exercise 2: Installation of the distribution box systems	Hands on. Real electrical installation. Inside wall and outside wall	Hands on. Real electrical installation. Inside wall and outside wall	MP trading
12:30-14:00	IC and IEE regulations Application on safety rules		Exercise 3: Testing the wiring			Nawec Training Centre and Power Station
14:00-14:30	Lunch		Lunch			

5.3 FIRST MODULE'S MATERIALS

Every participant in the workshop received general material, like 1 bag for the training materials with book and pen, and for each module a printed training material is given.

For the electrical module was given a handout called the Electrician's Manual, an introduction to electricity and the basic skills required to an electrician. The handout gives the participants the participants the necessary theory to understand the origins of electricity, basic electrical quantities, measuring instruments, measuring units, measuring techniques and the basic laws of electricity. The manual consists of the following topics:

1. What is electricity
2. The Simple Electrical Circuit
3. Measuring voltage and current
4. Safety measures
5. The Electrician training board
6. Materials and tools list for the training
7. The Equipotential Bonding scheme
8. Energy saving tips
9. The Five Safety Rules
10. Graphic Symbols

On the other side, it has been bought some materials to do the electrician training board exercises. Mbolo also contribute with all the materials for the real case: 23 bulbs and lights and other equipment that it has from the solar system installation.

Training Tools, materials & equipment

No.	ITEM	Qty
1	Distribution Box, 4 way (3)	
2	Switch, single gang	1
3	Switch, double gang	1
4	Socket, single	1
5	Socket, double	1
6	Lamp holder, pin	3
7	Surface box, plastic, single	4
8	Surface box, plastic, double	1
9	Surface box, cover, single	2
10	Connector block, 2.5mm2	1
11	Conduit pipe, 20mm2, bundle	1
12	Saddle clips, 20mm2	4
13	Bushing, 20mm2	4
14	Circular box, 20mm2, angle	1
15	Circular box, 20mm2, one way	1
16	Lamp , CFL, 8 watts	2
17	Lamp , CFL, 11 watts	1
18	Screws, half inch	2
19	Wall Plug, half inch	1
20	Cable,2.5mm2, red, meters	2.5
21	Cable,2.5mm2, black, meters	2.5
22	Cable,2.5mm2, gn/yel, meters	2.5
23	Cable, 1.5mm2, red, meters	5
24	Cable, 1.5mm2, Black, meters	2.5
25	Cable, 1.5mm2, earth, meters	2.5
26	Trunking, 16x25, length	1
27	Measuring Tape, 5m	1
28	Pliers, insulated	1
29	Cutter, insulated	1
30	Thumb Tester	1
31	Screwdriver set	1
32	Double pole tester 1	
33	Hammer 250gm (2)	
34	Wire stripper (2)	
35	Little Hacksaw	1

5.4 FIELD VISITS

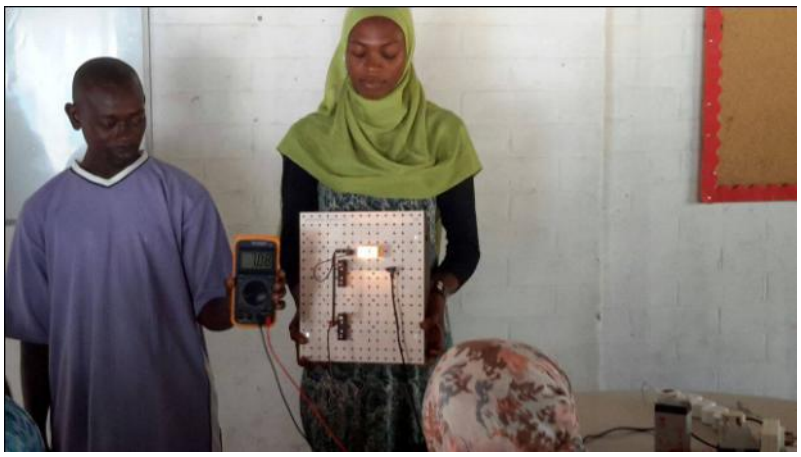
A field visit was conducted based on two topics: electrical suppliers and electrical training center.

As a practical workshop, we thought it was an important to give an answer about all you have to consider before buying the electrical equipment for the installation. How can we know what it is a quality product? Are the prices the same? Where I have to go? Visit to Batimat, Gambia Electrcal MP Trading were some of the shops selected around Kanifing area and the representative of the large range of electrical materials.

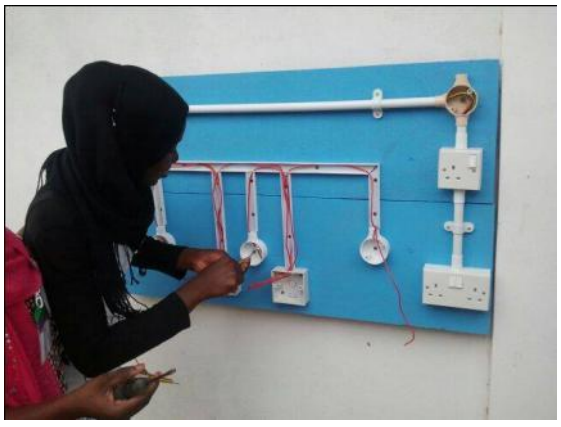
On the other hand, to visit Kotu Power Station, it brings an important visual knowledge where Gambian electricty comes from. This will be a brilliant introduction for the following module.

5.5 PRACTICALS

Practicals have been divided in two sections: practical on the electrical training board and applied knowledge in a real case.



The second and third day, 10 hours of practical were used to work in the construction of 2 circuits by groups of 2 or 3 women. One consisted of two socket outlets installed using conduit pipe and saddle clips. The second circuit consists of a light circuit supplying three light points and two different types of switches. This circuit is built using plastic trunking all of which are surface mounted. Also it was taught how to test your wiring job (see appendix 1: trainer's report).




The real exercise was to work on a real electrical installation. The participants, split into groups, they were able to settle the bulbs of Fandema Multipurspose Hall, inside and outside. For this exercise, Mbolo provided all the hangers, bulbs and lights.




5.6 ASSESSMENT

The groups were given a practical assessment after the exercises were completed. Amongst the assessment criteria were the following areas of assessment. Points were given on a scale of one to ten.

1. General impression of work done
2. Mounting of Parts on board
3. Stripping of Cables and wires
4. Connection of wire ends
5. Correct wiring of socket circuit
6. Correct wiring of light circuit
7. Care of tools
8. Correct use of tools
9. Tidiness of the workplace
10. Observation of safety rules

A theory test was also given to the participants at the end of the course. Results from the two assessments (see appendix 1: trainer's report)

6 EVALUATION

At the end of the workshop, an evaluation for each trainee were given (appendix : trainees evaluation). The results of eight issues selected to be considered as evaluation criteria, Concepts, practicals, materials, attitude, location, meals and workshop, have been analyzed. The results are satisfactory: every concept has been between good and very good. However, the suggestions given are good to highlighted in order to improve.

Overall the evaluations opinions, it can be briefly by saying that it was a very good workshop with adequate resources both materially and human. However, more than one week was needed to extensively deal with the aforementioned workshop topic. The work of the trainer has been appreciated on his communication and relationship with the trainees.

The participants that had a notion of electricity or energy, mentioned that a practical workshop like this helps to understand what you learn at school and applied at real life situations. The other women, request for more workshops like this one. Nevertheless, all of them agree that should be longer to understand it and have more time to do the practicals. Also they encourage Mbolo to continue doing more workshops like that and non-stop for the RE training that all of them show a great interest.

Some other issues that have been remarked are:

- Ramadan period is not our preference to do a workshop like this because we are not 100% concentrate and we have a lot of duties. This is said because sometimes, the schedule was extended.
- The timetable was not 100% respected by hour of starting (trainer not on time) or breaking hours took longer.

7 SUGGESTIONS AND CONCLUSIONS

7.1 FROM TRAINER

These are the trainer recommendations enclosed at the report:

(1) Repeat the above training regularly
(2) Collaboration between Fandema and NAWEC Training Centre
(3) Increase training time to two weeks
(4) Issue Certificate to Participants

7.2 FROM MBOLO ASSOCIATION

Mbolo has compiled all the suggestions and encouragement from trainers and trainees. Now we are planning for the second module on RE.

On the other side, we value a lot the response of the participants and we are now, planning for a consistent and longer training on electricity and RE to empower the women as a new skill.

Finally, the certificate will be given to the accomplishment of the second molude as the ending period of the workshop.

All the women are eager to be enrolled in the RE training module. Examples have been this rainy season that in August 6 women of Fandema have been attached to 2 household PV installation.

8 DISSEMINATION

All the progress of the workshop has been posted in Mbolo's Facebook to be followed. All of our fellows, between 300 to 700 in each post, really appreciate this initiative and congratulate all of the partners.


Mbolo Association
Some pictures from the 26 women undertaking the current Fandema workshop making electrical circuits. Wonderful to see the enthusiasm, motivation and active learning taught by Moses Campbell, electrical and electronic engineer. (16 fotos)


Mbolo Association
Amazing electricians for a day
Applying the electricity acknowledge from the workshop, the 26 women have remade the wiring of Fandema's hall, internal and external, with safety and quality criteria. The lights used are donated by Fredriksdal Emmaus that came with the last container. (15 fotos)


Mbolo Association
Página
Actividad
Estadísticas
Configuración
Conseguir público
Ayuda
591 Me gusta
Promocionar página
Last day of this first module, it has been an interesting tour to visit the electrical suppliers. All questions you must consider before buying the electrical equipment for the installation. How can we know what it is a quality product? Are... Ver más (21 fotos)
ESTA SEMANA
447
NO LEÍDAS
Baba Barry
Artur Matheu
Invitar