Progress Report II

(Awareness Creation within the Selected Communities)

Project Title:

Introduction of Efficient Biomass Cook Stove as a Strategy to Reducing Household Pressure on Natural Forests of Guinea Savanna Zone of Nigeria



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Funded by Second Rufford Small Grant: **26613-2**



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March 2020

1.0. INTRODUCTION

1.1. Background to the Study

The *First Rufford Small Grant* for this project has generated information on local use of biomass energy and importance of improved cook stoves for welfare of households. Firewood was discovered as the main energy used for cooking in the local communities. The firewood was collected freely in the wild twice a week within the distance of about 2 km. Almost all the sampled women agreed to change from their current inefficient three-stones stove to efficient cookstove proposed by the research team. However, the women preferred improved cookstove that is using firewood due to affordability and free accessibility.

1.2. Second Rufford Small Grant

This *Second Rufford Small Grant* is an intervention through introduction of efficient but simple to produced and maintained biomass cookstoves to households in local communities within guinea savanna zone of Nigeria. Unlike other projects where expensive and high technical cookstoves were introduced to local people, or where local people have to purchase or pay money to obtain the cookstove, this project is aimed at producing and introducing efficient cookstove with locally available materials that are free to procure.

1.2.1. First stage of this Second Rufford Grant

The *first stage of this Second Rufford Grant* has produced prototype of the efficient cookstove with the use of local materials such as clay soil, top soil, sharp sand, and water. Wooden mold, which was used to produce the cookstove blocks, was produced by a local furniture maker. Local labour will be used in producing the efficient cookstoves. The prototype of the efficient cookstove was properly tested before final selection.

1.2.2. Characteristics of the Adopted Efficient Cookstove

The characteristics of the developed efficient cookstove selected during the first stage for the introduction has the following advantages:

• *Free local materials use in production* – freely available local materials such as clay soil, topsoil, sandy soil and water were used in production.

- *Easy to build* vary fast and easy to produce from block making to stove molding.
- *Heat retention*: the produced efficient cookstove retains heat longer after the burning firewood has been put out.
- Safer when in use, the cookstove is less risky of burns to women and children
- *Low to no smoke* low to no smoke emission during use hence reduction in pollution and inhalation during usage.
- *Saves trees* reduces wood used for cooking to one third, hence reduction in firewood exploitation.
- Saves time and money saves time collecting wood or saves money buying wood.
- *Faster cooking* two things can be cooked at the same time on the two burners.

1.2.3. Second stage of this Second Rufford Grant

The second stage of this project is therefore targeted at creating awareness on the introduction of the developed efficient cookstove in targeted local communities selected during the First Rufford Small Grant. The people are to be informed about the improved and efficient firewood cookstoves, its advantages over the current three-stones they are using and the process of its production. There will be film show on the production of the efficient cookstoves. Finally, a day will be selected for the practical demonstration on the production of the efficient cookstoves in the different communities.

2.0. METHODOLOGY

2.1. Study Area

The study area is Ilorin, the Capital city of Kwara State located in North Central zone of Nigeria. Ilorin is located between latitudes 8° 05'N to 10° 05'N (8°30'N) and longitudes 2° 50'E to 6° 05'E (4°33'E). The State has River Niger as its natural boundary along its northern and eastern margins. The location has tropical climate and is characterized by double rainfall maxima with tropical wet and dry seasons. Both seasons last for about six months. The rainy season begins at about the end of March and lasts until early September, while the dry season begins in early October and ends in early March. Temperature is uniformly high and ranges between 25°C and 30° C in the wet season throughout the season except in July – August when the clouding of the

sky prevents direct insolation. On the other hand, the dry season ranges between 33°C to 34°C e (Olanrewaju, 2009; Akpenpuun 2013).

2.2. Description of the Study Site and Rural Livelihoods

The study was conducted in Bukola Community comprising three communities including Akewusola, Budo Are, and Oha Meje located in Ilorin East Local Government Area (LGA) of Kwara State, Nigeria. The vegetation of the area is Guinea Savanna Zone of Nigeria with two distinct rainy and dry seasons. The location has very hot weather during the day due to direct sunshine with clear cloud. During the night, the heat adsorbs into the ground and walls of building are continuously emitted making the environment still hot.

Major occupations of the people include farming and trading and the dominant religion is Islam. The communities have mixture of houses built with mud and cement blocks. The area is typical rural communities with poor rural road network. The communities are connected to national electricity grid but with epileptic power supply. There are primary and secondary schools as well as maternity centre, ownerships of which are shared by the three communities. Most of the developments in the communities are facilitated through self-help and intervention of civil societies and non-governmental organizations.

2.3. Cooking style of the Communities

Cooking stoves used by the people range from three-stone cookstove that mainly use firewood to metallic charcoal cookstove. The households with large members were mainly observed using the three-stone cookstove while some with older women and small family members used charcoal cookstove. From observations, the type of cookstove used then depends on number of factors such as number of people in the households, quantity of food the household is cooking, and affordability to purchase the charcoal.

It was observed that most of the households preferred carrying out their cooking outdoors especially at night during dry season. This was mainly observed during the dry season when the indoor was very hot. Although, cooking outdoor tend to reduce during wet season of the year. Also, smokes that emit from cooking with firewood make cooking indoor in the dry and hot

season very unbearable. Most importantly, cooking outdoor also contribute to the social lifestyle of the local people whereby the people chat and discuss together their day events or use the period to discuss any social issues while the food is cooking. The older women also use the moment to teach their young ones how to cook major dishes and prepare them for the future. After the food is done, quite a number of the people in the local communities preferred eating outside by seating on mats or benches under the moonlight.

3.0. PROJECT IMPLEMENTATION

For the project implementation, the activities carried include the following:

- 3.2.1. *Project Period*: The project implementation commenced in January 2020. This period falls within the dry season of the study area with no rain and dry environment.
- 3.2.2. *Reconnaissance Survey and Seeking Approvals:* Prior to commencement of the project implementation, reconnaissance survey was carried by the Research Team to the tree communities under Bukola Community. Most importantly, the Village Heads were visited to inform about the project goal and outputs, and to seek approvals. Since the Project have already familiarized and established cordial relationship with the local communities during the project of First Rufford Grant, seeking approvals for this Second Rufford Grant were a lot easier.
- 3.2.3. *Fixing Days for Awareness Meetings:* After approvals have been given by each of the Village Heads, awareness meetings were proposed for each of the community to carry out awareness and sensitization of the project. Though all the villagers were invited to the awareness meetings, however, the target participants were women, ladies and young girls who carry out cooking in households. The awareness meetings were fixed for the day that the women will not go the market or to the farm. First, evening was considered the best time of the day. This was due to two major reasons. First reason for choosing evening was due to the proposed videos to be projected to the people; video will only show properly in the dark. Second reason for choosing evening is that the people must have

returned from their daily work and activities. Furthermore, Friday when majority of the community members normally come around to observe Jumaat was considered among the days in the week. Hence, evenings of Fridays were considered the best for the awareness meetings for the three communities. Different days were selected for each of the community.

- 3.2.4. Activities on Days of Awareness Meetings: Prior to the day of the awareness meeting, calls were made to the Village Heads or their representative as reminder of our coming. On the day of the awareness meeting, preference was given to outdoors under trees located in the middle of each of the community. Preference for outdoors was to give access to everyone and without restrictions. Laptop and PowerPoint projector, powered by petrol generator, were used to show short videos of the proposed project activities in each of the community. Most importantly, the process of making of the improved and efficient cookstove was shown to the people in the video. These videos gave the people prior knowledge of what the project is all about and practical process of making of the efficient cookstove. After the presentations, opportunities were given for comments and questions. All the questions were answered and further clarifications were made on areas not clear to the people. After the presentations of the awareness meeting, the people were informed of the locally available materials needed for making of the efficient cookstoves. The required materials include clay soil, top soil, sandy soil, water, hoe and bucket. Due to the specification in dimension, the project will provide block mold, which will be used in making cookstove blocks, to each of the three communities for the free. The communities can share the mold or give to local carpenter to follow the dimension of the block mold to make their personal molds.
- 3.2.5. *Preparation for Practical and Demonstration for Production of the Cookstove:* The project combines training and building of capacity for the local people in making of the efficient cookstove. Hence, the people were asked to gather the materials and pick a day when the practical training and demonstration on the making of the cookstove will take place in the community. To the amazement of project team, each of the visited communities picked a day within the week that the awareness meeting was held as the

day for the practical and demonstration for making of the efficient cookstove to take place.

4.0. NEXT PHASE OF THE PROJECT

The next phase of the project is demonstration and practical production of the cookstove within the three selected communities. For this phase, practical demonstration will cover the following in each of the three communities:

- Making of the blocks for the cookstoves;
- The stages involve in assembling of the blocks for making of the cookstove;
- Effective use of the efficient cookstove; and
- Maintenance of the cookstove while in use.

5.0. REFERENCES

- Akpenpuun, T.D. (2013). Impact of Climate on Tuber Crops Yield in Kwara State, Nigeria. *American International Journal of Contemporary Research* 3(10): 52-57. Retrieved online at <u>http://www.aijcrnet.com/journals/Vol_3_No_10_October_2013/8.pdf</u>
- Olanrewaju, R. M. (2009). Climate and the Growth Cycle of Yam Plant in the Guinea Savannah Ecological Zone of Kwara State, Nigeria. *Journal of Meteorological and Climate Science*, 7: 43-48.

Project Pictures on Awareness Meetings in Communities



Gathering of the people prior to commencement of the awareness meeting at Oha Meje Community



Explanation of the project goal to the Compound Heads and community men during the awareness meeting at Oha Meje Community



Explanation of the project goal to the Compound Heads and community men during the awareness meeting at Oha Meje Community



Addressing the community men and women prior to the commencement of the video show



Addressing the community men and women prior to the commencement of the video show



Addressing the community men and women prior to the commencement of the video show



Addressing the community men and women prior to the commencement of the video show



Video showing during the Awareness Meeting in the communities



Question and answer session during the awareness meeting



Some women cooking dinner outdoor with charcoal cookstove at Akewusola Community



Typical Three-Stone Firewood cookstove at Budo Are Community



A woman and her children cooking dinner outdoor, later joined by her other children, with Three-Stone firewood cookstove at Budo Are Cooking



Typical charcoal cookstove used in the communities



Cooking dinner in "outdoor kitchen" by a boy and her small sister. Here the children carry out washing of wares (plates, pots, etc) and other chores before the food is ready.