Research Application Summary

Enhancing efficient energy coping mechanisms in Olio Sub-County, Eastern Uganda

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Abstract

This field attachment programme aimed at disseminating the MSc. study findings and train women and local artisans in constructing improved cook stoves. The programme thus provided an opportunity to the community to discuss the issues affecting them with regard to fuel wood. It also provided an opportunity to obtain tangible practical skills in construction of fuel efficient cook stoves using locally available materials. Through this project, it has been demonstrated that it is possible for rural households to construct and utilise fuel efficient cook stoves. Owing to this project, collaboration between blacksmiths and potteryists in Oburin parish was initiated leading to the formation of Oburin Stoves Enterprise (OSE). The OSE is aimed at diversifying community income sources, protect the environment, improve household stability and health. This project has also shown that communities can take action if provided with timely information and startup inspiration.

Key words: Cook stoves, dissemination, Eastern Uganda, field attachment, information

Résumé

Ce programme de raccordement sur terrain visait la diffusion des résultats d'étude de maîtrise, et à former les femmes et les artisans locaux dans la construction des foyers améliorés. Le programme a donc été une occasion pour la communauté de discuter des questions qui les touchent en ce qui concerne le bois de chauffage. Il a également fourni l'occasion d'obtenir des compétences pratiques tangibles dans la fabrication des foyers à combustibles efficaces pour la cuisson en utilisant des matériaux disponibles localement. Grâce à ce projet, il a été démontré qu'il est possible pour les ménages ruraux de fabriquer et d'utiliser des foyers à combustibles efficaces pour la cuisson. Grâce à ce projet, la collaboration entre les forgerons et les potiers dans la commune d'Oburin a été lancée, conduisant à la formation de l'Entreprise de Fabrication des Foyers d'Oburin (OSE). L'OSE vise à diversifier les sources de revenu

de la communauté, de protéger l'environnement, d'améliorer la stabilité et la santé des ménages. Ce projet a également montré que les communautés peuvent prendre des mesures si elles sont pourvues d'informations en temps opportun et de l'inspiration de démarrage.

Mots clés: Foyer pour la cuisson, diffusion, Est de l'Ouganda, raccordement sur terrain, information

Background

Fuel wood is the major source of energy for cooking and preserving food in rural Uganda (Ministry of Natural Resources, 1995). Olio sub-county in Serere District, Eastern Uganda is no exception to this phenomenon. In 2008, a MSc. research study on the "*determinants of fuel wood demand in Olio Sub-county, Eastern Uganda*" was undertaken using household survey data and satellite imagery. This study utilised The household survey provided socio-economic information on fuel wood use patterns, quantity, preferred fuel wood trees, income sources and levels among others. On the other hand, satellite imagery was primarily utilised for determination of land use and cover changes over time. Series satellite imagery from 1973 to 2001 were analysed using unsupervised classification.

From this study, it emerged that 99% of the households were dependent on fuel wood (firewood and charcoal) as the primary energy source for cooking, processing and preserving food. Per capita firewood consumption was estimated at 542.3 kg. Only 1% of the households utilised fuel efficient cook stoves. The others used open fire three-cook stone stoves. Dramatic changes in land use and cover were observed with small-scale farming being the major driver of change. Fuel wood scarcity was evident with collectors having to travel an average of 2 ±7 Km. Considering, the low use of fuel efficient cook stoves and the rising scarcity of fuel wood this field attachment programme was conceived to help remedy the situation.

Literature Summary

There has been an increase in the volume of scientific research conducted in communities in the last decade. However, few researchers and institution bother to provide feedback to participants, respondents and communities where such a research was conducted. There is an inherent weak capacity in publishing and disseminating research findings (Kenya Forestry Research Institute, 2008) at local level especially in the developing countries. For a research project to make a difference, research results need to be disseminated in an

appropriate and timely manner to the stakeholders (Bao *et al*., 2006). Further, there is evidence that processes of science communication are fundamental in harnessing science for sustainability (Scott, 2000). The Field Attachment Programme (FAPA) administered by RUFORUM seeks to provide early career scientists with the opportunity to disseminate their research findings in communities where such research was conducted. It is the basis upon which this project was conducted.

Study Description

Community based participation and participatory approaches were used to implement the dissemination exercise. Focused group discussions and village meetings were primarily utilised. Village elders, Local Council Chairpersons (LCs) and representatives, women, men and youths constituted select participants although children equally attended.

Three village based workshops were held in Osuguro and Oburin parishes. Participants included women, men, youths and the elderly. A Special meeting was also held with elders at Mzee Moses Okurut's home in Oburin village (Fig. 1). It was important to meet the elders due to their influence in the social structure of these communities. In these meetings, the importance of utilising fuel efficient cook stoves and the need to continue giving guidance to the youth was discussed. Participants were also taken through some techniques that can help minimise fuel wood usage (Fig. 2) as well as undesirable practices that need to be

Figure 1. Meeting the elders of Oburin at Mzee Okurut's home.

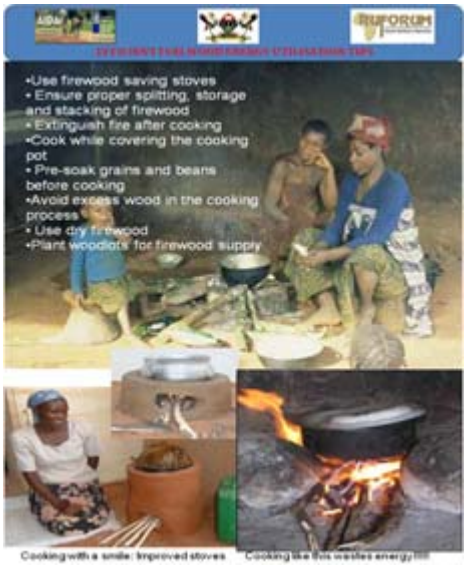

Figure 2. A Flier used in the dissemination exercise.

discouraged. During the discussions, participants noted that they often objected to cooking food with saucepans covered because of undesirable odor and taste that is attributable to smoke.

Demonstrations on how to construct fuel efficient cook stoves using locally available materials was conducted. Participants were asked to identify materials they thought were usable. Clay, bricks, grass, bendable wires and a bicycle ring were identified. We demonstrated how a fuel efficient cook stove could be molded using clay (Fig. 3). Participants later had the opportunity to mould one themselves under our observation (Figs. 4, 5, 6). They worked and showed that it was possible to construct a household based improved cook stove in about one hour.

Figure 3. Beginning the demonstration.

Figure 4. A female participant tries out moulding a stove.

Figure 5. A male participant trying it out the construction of improve cook stove.

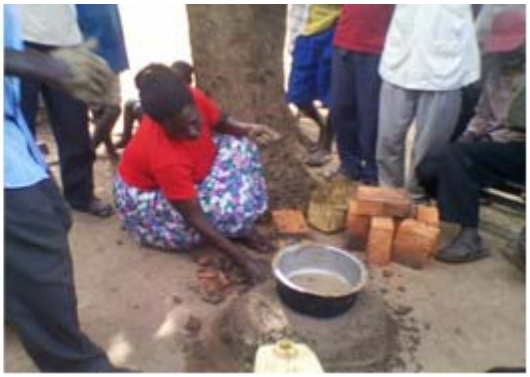

Figure 6. A completed version of the local improved stove with a saucepan on.

Research Application

Idupa, Oburin and Ocapa trading centers were identified. They were briefed on the importance of local skills and talent. They were also briefed on why they needed to pass on these skills to the youths. The first meeting with the local artisans was stormy because they were more interested in finding out how they

would benefit by engaging in the fuel efficient stoves project. The next two meetings streamlined our positions and an agreement was reached on how we would work together. Samples of fuel efficient cook stoves were available for observation. The local artisans examined the samples and concluded that it was a simple task to construct them given their experience. They mobilised each other and nominated Mr. Oculo John Kokas as the lead 'engineer' of the project. Mr. Oculo was preferred due to his long practical experience spanning over four decades. Mr. Agolor John was nominated to lead the team of clay specialists who would supply the clay molds. They started sharing ideas on building model cook stoves (Fig. 7) and went ahead to construct some (Fig. 8).

Figure 7. Mr. Ongwala (yellow shirt), Mr. Aliayu (navy blue shirt) and Mr. Oculo (blue cap) sharing ideas with their first model stove.

Figure 8. A model sample Oburin stoves a waiting completion with clay.

Oburin Stoves Enterprise. On the fifth day of the dissemination exercise, the area local council leader proposed ways of sustaining the objectives of the original study. The resulting discussions blacksmiths and clay specialists resulted in theestablishment of , Oburin Stoves Enterprise (OSE). . OSE seeks to transfer skills to the youths and bring local artisans to work together for improved incomes while appreciating the value of environment. OSE has seven (7) specific objectives including: (i) build skills in improved stoves design, manufacture and marketing; (ii) improve on the availability of improved stoves within Serere area and beyond; (iii) broaden the income base of local artisans and youths; (iv) utilise local talent for development; (v) bring community members to work together for prosperity; (vi) encourage skills transfer from elderly local artisans to the youths; and (vii) play a role in the protection of the environment by ensuring reduced fuel wood wastage among

community members. A Strengths Weaknesses Opportunities and Threats (SWOT) analysis of the stoves project was conducted and summarised in Table 1.

Table 1. Summary of SWOT analysis of the cook stoves project in Oburin parish.

a) Strengths	**b) Weaknesses**
There is willingness to work Local artisans (blacksmiths and clay specialists) are available Materials especially clay is locally available There is a potential market	The idea is still new and not tested by local artisans Members have not been used to working together Members are hoping for immediate gains from the project
c) Opportunities	**d) Threats**
There is a potential market within the newly created district The prices of charcoal and firewood are drastically rising Serere district is young and urbanizing	Members lack business skills and do not perceive what they do as business and entrepreneurship Local artisans have a high liking for alcohol Youths tend to undermine artisan work Some resources and materials have to be purchased such as iron sheets and metallic rods There are no finances for motivating trainers for a long time and running the project

Participants also suggested some possible action milestones to remedy some of the challenges. They noted that Oburin Stoves Enterprise should be registered as a Community Based Organisation (CBO). This would enable them source for funding. They needed also identified training in resource mobilisation and management, planning and establishing a code of conduct as action areas that need to be addressed.

End user benefits. During the field attachment programme we interfaced with various stakeholders including local artisans (clay specialists and blacksmiths men), women, District Agricultural Officials and local administration members. It is through these interactions that a loose collaborative group (Oburin Stoves Enterprise) was formed. Table 2 summarises benefits acquired by end users in the short run and those anticipated in the long-term.

Challenges faced during the dissemination exercise. Three outstanding bottlenecks were observed during the dissemination exercise. They included: (i) the per diem 'syndrome' where community members need to be paid to attend meetings; (ii) high consumption of alcohol among males especially in Oburin; and (iii) governance and leadership challenges in the local council system.

Table 2. Summary of anticipated end user benefits.

Identified end user	Short term benefits achieved	Anticipated long term benefits
Local artisans (blacksmiths men and clay specialists)	Knowledge and understanding on why to construct improved cook stoves Skills to construct improved cook stoves disseminated Sample improved cook stoves designed and developed The need for collaborative working shared Local artisans brought together to share their knowledge and skills	Improved incomes from sale of improved cook stoves Diversified livelihood sources Appreciation of environmental resources
Women	Knowledge and understanding of fuel efficient cooking techniques shared Skills on construction of improved cook stoves using locally available materials demonstrated Different types of improved cook stoves displayed for public viewing	Transferable skills to generations to come Improved health e.g. reduced respiratory problems Better community relations e.g. reduced domestic violence
Local council administration	Information Knowledge, and understanding on the fuel wood consumption patterns and behaviors in Oburin parish Need for local imitativeness to solve local problems shared	Better administration through proactive community engagement Up-scaling of improved cook stoves through advocacy in the community *"ikikon"* (meetings) advocated
District Environment and Agriculture officers	Information and knowledge on fuel wood usage in Olio sub-county shared Advocacy for use of improved cook stoves in the community shared Information on agricultural practices in Serere district shared	Reduced deforestation and forest degradation Regeneration of grassland and savannah forest lands Biodiversity conservation Better soil and water conservation
Oburin Stoves Enterprise (to be registered as a community based organization-CBO)	A loose coalition of local artisans under Oburin formed Objectives of the loose coalition defined Loose coalition to be registered as a CBO	Projects designed towards up-scaling improved cook stoves Commitment to environmental conservation Integrated approach to rural development adopted

Way forward. Enthusiasm among local artisans has been awakened. However, the challenge that lies ahead is sustaining the project activities that have been initiated. There is still an uphill task of continuing to follow up on the process of adoption and utilisation of the disseminated technology. There is also a need to build entrepreneurship capabilities among local artisans and other community members.

Acknowledgement

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