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NOVEMBER 2012

STATUS OF RURAL ENERGY IN THE ALBERTINE RIFT OF UGANDA

BACKGROUND

This study sets out to assess the status of rural energy in the Albertine Rift of Uganda with a view to providing an understanding of the energy situation in the country. The study provides benchmarks for addressing energy issues in the areas under study. In this study, the status of rural energy in the Albertine Rift of Uganda was discussed from the perspectives of energy access (supply) and use (demand) for cooking, lighting and processing or production among households and institutions. The specific focus was in the districts of Kasese, Kibale and Yumbe.

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A charcoal producer in Kibaale District in Western Uganda

MAIN FINDINGS:

Some of the major findings of the study include:

- Biomass is the major source of energy for cooking and heating at both household and institutional levels. The majority of the household respondents (86.2%) frequently use firewood for cooking, followed by charcoal (45.7%), kerosene (4%), electricity (2.4%) and LPG (Liquid Petroleum Gas) (1.8%). Charcoal dominates as cooking energy in urban areas while firewood dominates in rural areas.
- Kerosene (Paraffin) is the dominant source of energy for lighting country wide. The majority of the household respondents (80.5%) frequently use kerosene for lighting followed by electricity (15.6%), and solar (15.4).
- Within households, the dominant energy use for production/processing is firewood. This is mainly used

in distilling local spirits (Waragi), brick making and tobacco curing.

- The commonest technologies used for cooking were the traditional three stone fire place (77%), the metal charcoal stove (10%) and the improved cookstoves (12%). The improved cookstoves were more dominant in Yumbe district where about 49% of the respondents were using them.
- On lighting, the technologies differ in rural and urban areas. Most rural households use the wick burner (Tadooba) and in the urban areas the most dominant source of lighting was electricity, in areas where it is accessed. Lighting in institutions was mainly by electricity and solar PV (Photovoltaic).
- Per capita consumption of wood fuel is high. Firewood consumption averages 1.33 kg per day, and was lowest in Yumbe district at 1.1 kg and highest at 1.46 in Kasese district. On the other hand, per capita charcoal consumption was 0.49 kg per day and was lowest in Yumbe at 0.4kg and highest in Kibale at 0.55 kg. The wood fuel consumption translates into annual per capita consumption of 484.23 kg for firewood and 178.85 for charcoal. Per capita consumption was lowest in Yumbe District where use of improved cooking stoves is high.
- The share of energy total household expenditure was 6.1%, composed of firewood (3.1%), charcoal (1.3%), and kerosene (1.4) and electricity (0.3%). Given that most households are in the low income bracket, the expenditure on energy leaves them with very low income to spend on other household needs, such as, food and medical care. The increasing wood fuel prices are also increasing household expenditure on energy especially in urban areas.

The following are some of the interpretations of the finding;

- Energy deprivations are highest for the households belonging to the poorest strata. The rural-urban comparisons suggest that the gap between urban and rural energy access (wood fuel) levels for cooking is not declining, whereas that for lighting is declining albeit at a very slow rate.
- The wood fuel industry is integral to the economy of the Albertine Rift. Charcoal production and trade is particularly a lucrative industry. It provides jobs, generates income and is a source of local revenue to local governments.
- The energy industry especially, at the local level, is riddled with problems of lack of a clear policy and regulatory framework. There are no structures at local governments to handle energy issues.
- The electricity consumption of households in the Albertine Rift is very low. Lack of access, unreliability and high tariffs are responsible for the low use of electricity.
- The use of advanced solar technologies as an alternative energy sources in the study area is still at a very limited scale. The majority of the population is not aware about solar technology use and application, because they lack the necessary information.
- People decide on their sources of cooking and lighting energy based on affordability, accessibility, convenience and interest. Therefore, any strategies for promotion of alternative energy sources should consider making the technologies affordable, accessible and convenient.
- There is considerable potential for energy savings through efficient lighting. This can be done by installing energy saving bulbs in households, schools, hospitals and other institutions. This would save energy but also provide better quality of light.
- Opportunities for implementation of renewable energy systems exist, but must be carefully thought through. Hydro, biomass, solar and geothermal potentials/resources exist but harnessing them depends on careful consideration of the timing and availability of the resources.

THE IMPROVED COOK STOVES WERE MORE DOMINANT IN YUMBE DISTRICT WHERE ABOUT 49% OF THE RESPONDENTS WERE USING THEM.

RECOMMENDATIONS

The study results suggest that Uganda needs a radical approach to increase modern and clean energy access to reduce poverty and improve livelihoods.

General Recommendations

- Since wood fuel has a high potential for income generation through domestic consumption in the area, other parts of Uganda, and can also be promoted as an export commodity especially to South Sudan, the government needs to recognize and formalize the wood fuel industry in Ugandan.
- Government and partners should provide financial and technical support to Small and Medium Enterprises (SMEs) that make and trade in efficient cookstoves.
- Tree planting in the country should be undertaken as an integral part of socio-economic development.
- There is need to develop strategies for dissemination of clean and renewable energy sources especially solar, biogas, LPG as a means of promoting wider sales and use.
- There is need for advocacy to make the government become directly involved in the promotion of use of alternative sources of energy in the country, especially now at a time when government is promoting rural electrification.
- The government should encourage solar energy use by providing subsidies to purchase solar equipment, protection against theft through insurance, serialization, certification or registration of solar equipment. There is need to put in place stringent measures to prevent the entry into the country of counterfeit solar equipments.
- There is need to establish up-country solar energy equipment distribution, marketing and maintenance centres. There is need to build additional technical and professional capacity in the country in the fabrication, installation and maintenance of solar equipment in the country. It should be a policy that all institutional buildings install solar technologies for water heating and lighting
- There is need for a compressive approach to ensure access to clean energy to the population in the Albertine Rift of Uganda. The focus should be on alternatives (Non wood fuel intensive) energy and livelihood options. The approach should be on reducing environmental degradation, promotion of energy efficient cookstoves, promoting alternative energy sources, reducing the vulnerability of women, promoting efficient mechanisms of charcoal production and its sale as a source of household income.
- Inefficiencies in charcoal production should be addressed by promoting efficient charcoal kilns. The starting point can be to build model community kilns with high efficiencies for the use of organized charcoal producing communities.
- Wood fuel producers and traders should be organized into associations or cooperatives (SACCOS) that can be self regulating and are easy to mobilize to practice sustainable charcoal production.
- Training programs should be initiated for wood fuel traders to widen their skills, including tree planting, marketing and packaging, enforcement of sustainable wood fuel production in their communities, management of the fund levy created, running a formal business (entrepreneurial skills) and using improved kilns and energy saving cookstoves.

Conclusion

There are a number of areas, identified above, where energy access, energy-efficiency and renewable energy measures can be implemented, even on a test basis.

In many cases, implementation of energy efficiency measures require that engineers familiar with, say cookstove technologies, undertake a series of "energy audits" in households and then thereafter do the installation. Similarly, site assessments for host areas for renewable energy demonstrations, as well as discussions about, ultimately production of renewable energy equipment in the Albertine Rift could be undertaken. There is need to try and identify incentives for local decision-makers to adopt such measures by themselves. Implementing energy efficiency measures in the Albertine Rift requires re-thinking and the creative adaptation of the methods used to encourage energy efficiency and renewable energy in other countries.

Currently in Uganda, firewood and charcoal continue to play a vital role in the energy sector. But there is need to employ more sustainable energy sources to meet the ever growing demand for energy.

THERE IS NEED TO OFFER FEASIBLE ALTERNATIVES TO THE HEAVY RELIANCE ON FIREWOOD FOR COOKING IN RURAL AREAS AND CHARCOAL IN URBAN AREAS.