

Biomass Energy Supply and Demand Imbalance is a looming crisis, which needs urgent Investment.

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For more information, contact the
Executive Director, Environmental Alert.

Tel: +256-414-510547/510215

Email: ed@envalert.org

Website: www.envalert.org



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¹ Further information about Environmental Alert is available in Box 1.

List of abbreviations

CFR	Central Forest Reserve
DFO	District Forest Officer
DLG	District Local Government
EA	Environment Alert
EU	European Union
FAO STAT	Food and Agricultural Organisation, Statistics
FLR	Forest and Land Restoration
FMNR	Farmer Managed Natural Regeneration
FREL	Forest Reference level, REDD+
FSSD	Forestry Services Support Department
GDP	Gross Domestic Product
GEF	Global Environment Facility
ICRAF	International Centre for Research In Agroforestry
IUCN	International Union for Conservation of Nature
LFR	Local Forest Reserve
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MDA	Ministries, Departments, and Agencies
MDP (OP)	Ministry for Disaster Preparedness Office of Prime Minister
MEMD	Ministry of Energy and Mineral Development
MFPED	Ministry of Finance Planning and Economic Development
MLGSD	Ministry of Labour Gender and Social Development
MLHUD	Ministry of Lands, Housing and Urban Development
MOWT	Ministry Works and Transport
MST	Ministry of Science and Technology
MWE	Ministry of Water and Environment
NaFORRI	National Forestry Resources Research Institute
NARO	National Agricultural Research Organisation
NCTPP	National Community Tree Planting Programme
NDP	National Development Plan
NFA	National Forestry Authority
NFP	National Forest Plan
NFs	Natural Forests
NFTPA	National Forestry and Tree Planting Act
NORAD	Norwegian Agency for Development Cooperation
NRO	Natural Resources Officer
PA	Protected Area
R&D	Research and Development
REDD+	Reduced Emissions from Deforestation and Forest Degradation
SME	Small and Medium Enterprises
SPGS	Sawlog Production Grant Scheme
THF	Tropical High Forests
UBOS	Uganda Bureau of Statistics
UGX	Uganda Shilling
UNCST	Uganda National Council of Science and Technology
UNDP	United Nations Development Programme
UNHCR	United Nations High Commission For Refugee
UTGA	Uganda Timber Growers Association
WWF	World Wildlife Fund

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1.0 Introduction

This policy brief presents key recommendations for advancing structured private sector investment in sustainable Biomass Energy Production within Central Forest Reserves and Forest Landscapes in Uganda. It's largely based on the study on, '*Understanding the current status, emerging issues (challenges & opportunities) for advancing Private Sector Investment in sustainable Biomass Energy Production in Uganda.*' The policy brief was compiled through review of this study report among other relevant recently published literature on biomass energy production in Uganda. Through these processes, key emerging issues were identified and synthesized as a basis for policy recommendations suggested for implementation by key stakeholders with an overall target of advancing effective advancing structured private sector investment in sustainable Biomass Energy Production.

2.0 Background

The national total primary energy is comprised of 88% biomass energy, 10% fossil fuels and 2% electricity (MEMD, 2019). The biomass energy use is 74% for domestic, 18% industry and 8% institutions and SMEs (MEMD, 2013). Whereas the Uganda population is currently 40.3 million and projected to be 55.4 million by 2030 (UBOS, 2019) with an annual growth rate of 3.2%, biomass will still be a major source energy. Over 96% of the population especially in the rural areas depends on firewood for domestic energy (MWE, 2016a). The influx of refugees into the country further exacerbates the demand for biomass energy.

The forest cover in Uganda currently stands at 12.4% of the land area, representing about 2,500,000 hectares of which 64% woodland, 20% tropical high forest and 16% of plantations and scattered trees in farmland (MWE, 2018). The standing wood biomass is estimated at 284.1million tons (355.125 million m³). The current consumption of wood biomass for energy stands at about at 57,272,101 m³ of raw wood p.a. (FAO, 2018) and grows at 3.2 % in line with population growth rate. The capacity of the forest to sustainably supply wood is estimated at 26 million tons equivalent (32.5 million m³) of raw wood per annum representing 57% of the wood biomass annual demand. This is in addition to 1.6 million cubic meters of fuel wood consumed by refugees per annum. While the contribution of woody biomass may slowly decline as a percentage of total energy consumption, demand for woody biomass for fuel can be expected to rise three- to five-fold by 2040. In order to meet the current annual fuel wood biomass demand, it will require an area of about 2 million hectares of woodland (30m³/ha) or about 300,000 ha (200m³/ha.) of well managed plantation.

Uganda has a total of 8,079,622.1 ha of land available for forest landscape restoration of which Government through the Bonn Challenge is committed to restore 2.5 million hectares by 2030 through massive tree planting involving all stakeholders, private sector inclusive (MWE, 2016b). Dedicated biomass energy plantations could be part of this important intervention to establish at least 133,000 ha per annum with potential of generating 20- 30 million m³ of wood biomass to supplement the natural wood stock from the forested areas with supply gap of about 26 million m³ in 2019. The cost of establishing 133,000 ha is estimated at UGX 532 Billion (USD 144 Million) in a period of 5 years. The current rate of tree plantation establishment of about 10,000 ha per annum, is 20% of the average annual rate of forest loss of 50,147 ha, which mainly targets industrial wood. Small woodlots and agroforestry are the appropriate options for forest landscape restoration and enhancing biomass energy production due the existing small landholdings.

2.1 The problem and justification

The Energy sector is dominated by biomass that contributes nearly 88% of the total primary energy consumed (MEMD, 2019). Furthermore, the energy demand is growing between 10-15% posing more stress on the biomass resource partly as a result of the growing population currently which is estimated at

about 42 million and with an annual growth rate of about 3.2%. It's projected to reach 93.4 million in the next 30 years (UBOS, 2017). The high demand for fuel wood and charcoal is a key contributor to the current escalating deforestation and forest degradation, currently estimated at about 250,000 Ha lost per year (MWE, 2016). Moreover, there is inadequate supply of biomass in medium and long term coupled with unsustainable production, yet biomass energy will still be a major source of energy given the increasing demands for energy by the growing population. Notable is that if people depending on forests for these goods are not provided with sustainable biomass (fuelwood, charcoal) alternatives, more pressure will still be on forests as highlighted in the REDD+ strategy. Besides, in addition sustainable production of biomass energy is among the practical solutions to deal with this challenge.

This is already stipulated in the National REDD+ strategy as strategic option 2 on, sustainable fuelwood and commercial charcoal production among the strategic options for addressing the drivers of deforestation and forest degradation (MWE, 2017). Therefore, the National Forestry Authority (NFA) as the custodian for management of Central Forest Reserves in Uganda, which cover 15% of the total forest estate is a key stakeholder and player to advance sustainable biomass energy production with the forest estate through collaboration and promotion of private sector investment. Besides, over the years NFA has allocated part of the land in the CFR for commercial timber production for restoration and sustainable management of the CFRs. Some of the investments in biomass should be on forest on private land which is 70% of the forest estate but there could be other limitations of biomass investments. However, it's also not clear whether there is proactive considerations for investment in biomass energy on this land. The guidelines and practices seem to be silent on this. Besides, the status of investment in sustainable biomass energy production within forest landscapes is not known and or documented.

It's against that background that Environment Alert commissioned a study on, *'Understanding the current status, emerging issues (challenges & opportunities) for advancing private sector investment in sustainable biomass energy production within central forest reserves and forest landscapes in Uganda.'* Thus, study will generate some baseline information of the status of investments in sustainable biomass production within central forest reserves and forest landscapes across the country. Overall the study targets at identifying the underlying issues (challenges & opportunities), recommendations and actions for advancing structured investments in sustainable biomass energy production within central forest reserves and forest landscapes to contribute towards the huge national demands for biomass energy.

2.2 Objectives of the study

The overall objective of the study is, *'identify the underlying issues (challenges & opportunities), recommendations and actions for advancing structured investments (by Government & Private sector) in sustainable biomass production within central forest reserves and forest landscapes across the country to contribute towards the huge national demands for biomass energy.'*

3.0 Methods and approach

The policy brief was compiled through review of this study report on, *'Understanding the current status, emerging issues (challenges & opportunities) for advancing private sector investment in sustainable biomass energy production within central forest reserves and forest landscapes in Uganda,'* among other relevant recently published literature on biomass energy production in Uganda. The overall study approach was participatory where relevant stakeholders in the wider energy sector were consulted to tap their experiences, skills and knowledge about the various areas of the study focus. Key informants from line Ministries, departments and agencies as well as district local governments, private sector (tea companies, large scale tree growers), research institutions and CSOs dealing in biomass energy production and

promotion of efficient use were engaged through discussions, interviews and questionnaires to enlist their inputs into the study. Thus, in total 36 key informants were engaged. They were selected considering relevance to the biomass energy production and use and representation of the landscapes. Before the engagement with the key informants, step by step procedures were conducted as part of prior preparations. These included the following: *Discussion with Environment Alert Technical Team; Document review, Development of data collection tools, conducting interviews, self-administered questionnaires, and stakeholder mapping.* The review of secondary data as well as collection of primary data from stakeholders in the biomass energy production was also undertaken. The study focused on two forest landscapes namely southwest rangeland and western mid altitude farm lands. However, respondents from other landscapes were included to give the study a national perspective.

All data collected through these processes was analyzed and synthesized thematically with a purpose of obtaining recommendations that are pragmatic in the existing circumstances. Detailed descriptive statistics were presented for each of the objectives of the study. Derivation of percentile probabilities were used to qualify summaries of perceptions from the respondents and displayed in tables and graphs. Transcription of qualitative data was done to derive percentile estimates of the key selected variables.

The data analysis and synthesis informed the generation of policy brief, which stipulated key emerging policy issues and responsive recommendations aimed at advancing structured private sector investment in sustainable Biomass Energy Production within Central Forest Reserves and Forest Landscapes in Uganda. The draft policy brief was reviewed by the technical team at Environmental Alert for further inputs as part of the quality control measures. Furthermore, they were presented for further, review, scrutiny, inputs and validation by technical team comprising of key stakeholders involved in the promotion of biomass production in Uganda.

4.0 Key results

4.1 *Estimated biomass energy trends*

The biomass energy consumption in 2018 was estimated at 57.2 million metric tons while the sustainable supply for the same year was 32.5 million tons culminating to a deficit of 24.7 million tons as shown in Table 1. The consumption is estimated to continue growing at the rate of the population growth of 3.2 % per annum. Unfortunately, the sustainable supply is likely to decrease or remain stagnant or grow at a lesser rate if no adequate deliberate investment is made to plant trees for biomass energy production. With biomass energy need estimated to grow at average of 2 million m³ per annum, by year 2027 the deficit will be 43.5 million m³ if no investment is made in tandem with the biomass energy consumption. Figure 1 shows the ensuing widening trend between biomass energy consumption and the sustainable supply

Table 1. Biomass consumption, sustainable supply and deficit.

Year	Estimated Consumption (M3)	Estimated sustainable supply (m3)	Deficit (m3)	Annual increase of deficit (m3)
2018	57,272,101	32,500,000	24,772,101	
2019	59,104,808	32,500,000	26,604,808	1,832,707
2020	60,996,162	32,500,000	28,496,162	1,891,354
2021	62,948,039	32,500,000	30,448,039	1,951,877
2022	64,962,377	32,500,000	32,462,377	2,014,337
2023	67,041,173	32,500,000	34,541,173	2,078,796
2024	69,186,490	32,500,000	36,686,490	2,145,318
2025	71,400,458	32,500,000	38,900,458	2,213,968
2026	73,685,272	32,500,000	41,185,272	2,284,815
2027	76,043,201	32,500,000	43,543,201	2,357,929
Estimated average annual deficit increase				2,085,678

Source: Environmental Alert, (2019).

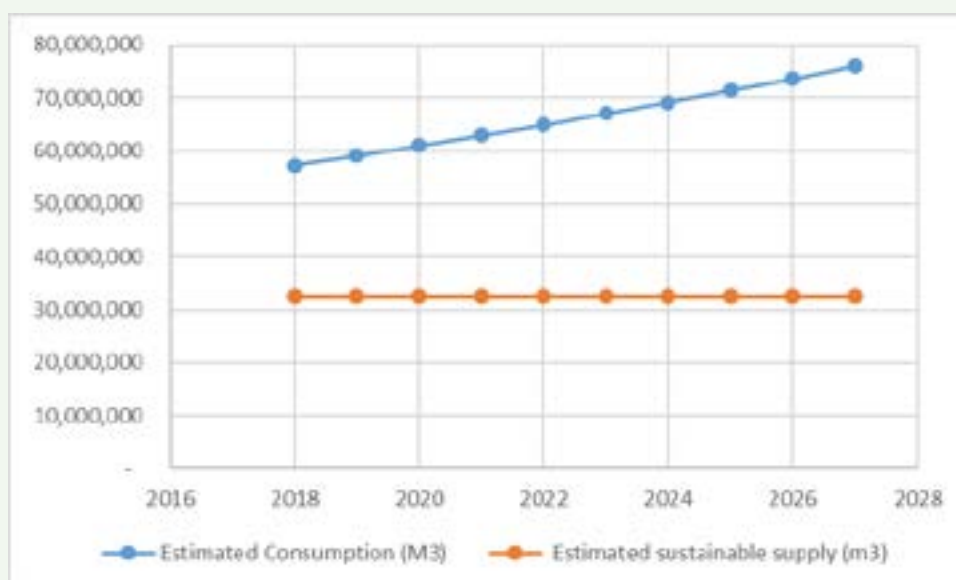


Figure 1. Estimated Biomass energy supply gap (2019-2027).

Source: Environmental Alert, (2019).

4.2 Context and Importance of Biomass Energy

The national total primary energy is comprised of 88% biomass energy, 10% fossil fuels and 2% electricity (MEMD, 2019). The biomass energy use is for domestic 74%, industry 18% and institutions and SMEs 8% (UNDP, 2013). The Uganda population is estimated at about 40.3 million (UBOS, 2019) and with an annual growth rate of about 3.2%. Biomass energy will still be a major source of energy in the medium to long term given the increasing demands for energy by the growing population. Over 95% of the population especially in the rural areas depend on firewood for domestic energy. The influx of about 1.4 million refugees to Uganda further increases the demand on biomass energy. This is against inadequate supply of biomass coupled with unsustainable production.

According to FAO, (2018), the influx of about 1.4 million refugees to Uganda further increases the demand on biomass energy estimated to be 1.6 million m³ of fuel wood per annum. This is against inadequate supply of biomass coupled with unsustainable production. Dedicated Biomass energy production is the solution which will have socio-economic benefits beyond the energy supply including direct and indirect employment especially to women and youth, mitigating climate change through enhancing carbon stocks and contributing to GDP through supporting industry. Access to renewable, clean energy is an important indicator when analyzing poverty as it has a critical and immediate impact on the health and nutrition of households. Scarcity of fuel wood drives people to opt to less nutritious fast cooking foods, instead of beans and peas, for example and drives people to over-exploit biomass including in protected forests (MWE, 2017).

4.3 Biomass Energy Production and Use

Firewood will remain the dominant biomass energy source in the rural areas depending on supplies from the natural wood in patches of forests remaining, woodlots and trees on farmlands. The current annual fuel wood biomass demand of about 60 million m³ requires an area of at least 2 million hectares of woodland (30m³/ha/yr.) or about 300,000 ha (200m³/ha/yr.) of well managed plantation (MEMD, 2013). The rate of harvesting the existing natural forests and plantations far exceeds the natural capacity of the forests to regenerate. Similarly, the area of new biomass energy plantations so far established is not commensurate with the demand. This has led to the unsustainable harvesting of biomass resources resulting in the overall deforestation and forest degradation experienced throughout the country (see Figures 2 &3) .



Figure 2: Preparing earth charcoal kiln - wasteful technology for charcoal production in Nwoya district. *Photo credit: Levi.*



Figure 3: Fuel wood bundled for sale in Moroto district. *Photo credit: Esimu.*

On the other hand, charcoal will remain the dominant energy source for the urban areas due to the unaffordability of the available alternatives such as solar, gas and electricity to the majority of the urban dwellers. The use of the traditional earth kiln for charcoal production, with a low recovery of 8-15%, results in the rapid and wasteful depletion of the natural feedstock and is not profitable for feedstock from the plantations raised at high cost. There are initiatives to introduce and promote improved charcoal kilns such as the Casamance (modified earth kiln) with efficiency of 20-30% and the Adam and Sam1Retort kilns and Half Orange 30-40% for small scale production and the Missouri and CK Euro kilns 35-42% for large scale production. The Missouri Kiln in New Forest Company produces about 3,850 tons of charcoal from

11,000 tons of wood and the CK Euro in Green Resources has an annual capacity of 3,400 tons of charcoal which requires about 8,500 tons of wood (SPGS, 2014).

However, the adoption of these improved kilns has been low due to high initial investment costs, and costs of transporting the kiln from one area to the other for the Casamance kiln and cost of transporting the feed stock for the half orange and Retort kilns which are fixed in one area. Establishment of dedicated biomass energy plantations (e.g. in Figure 4) will provide the opportunity for use of improved kilns since there will be no much expense in transporting the kilns or feedstock within the plantation area. The plantations will also generate adequate and uniform feedstock to supply the kilns. *Eucalyptus plantations for example can provide 200-300 m³/ha of wood in 5 years as compared to natural production 100-150 m³/ha in the same period with additional advantage of planned and controlled production conditions for the former.*



Figure 4: Biomass energy plantation- sustainable approach. Photo credit: Levi.

4.4 Addressing the gap in Biomass Production

The main problem is the wide gap between biomass energy production (supply) and demand, the unsustainable harvesting of natural forest resources resulting in deforestation and forest degradation. The causes of this problem are high population dependency on biomass energy, loss of forest cover due to unsustainable harvesting of forest products, forest clearance for agriculture, urbanization, industrial development; inefficient technologies in the production and use of biomass resources resulting in more trees cut and above all the lack of dedicated and sustained investments in biomass production to replace the biomass harvested.

Over the last 30 years there has been no significant dedicated effort towards establishing biomass plantations to address the rapid demand of wood biomass energy estimated at 43,292,521m³ of firewood and 1, 118,336 metric tons of charcoal or equivalent of 13,979,580 m³ of raw wood giving an estimated

total of 57,172,101m³ of fuel wood demand per annum (FAOSTAT, 2018) . This has grown from 39,636,358m³ of firewood and 931,466 metric tons of charcoal (11,643,320 m³ of raw wood) and total of 51,279,678 m³ of fuel wood demand in 2010. If nothing is done i.e. business as usual (BAU) to provide alternative sources of renewable and affordable thermal energy, the demand for wood biomass will significantly increase by 2030 in line with the population growth estimated to be 55.4 million (UBOS, 2019).

4.5 Existing Interventions

There are limited interventions implemented by government to address the gap and these include;

- i. The UNDP-GEF-MEMD - Promotion of Sustainable Charcoal Production Project (popularly known as the Green Charcoal Project) piloted in the districts of Mubende, Kiboga, Nakaseke and Kiryadongo and NFA. It is meant to address improved charcoal production technologies and sustainable land and forest management. The project planned to establish 5,900 ha of dedicated biomass energy plantations and improve management of 50,000 ha of existing forests. To date, NFA has planted 200 Ha of dedicated charcoal production plantation in Kaweri CFR in Mubende district under this project.
- ii. Since 2009 to date, NFA through GoU funding, has distributed 51million seedlings under the National Community Tree Planting Program (NCTPP) for planting of woodlots and trees on farm. NFA has, since 2005, allocated 196,882 ha of land in Central Forest Reserves, representing about 15 % of total CFR area of 1.2 million ha, for private sector investment in tree planting. So far, 82,710 ha have been planted with commercial plantations by the private sector, of which, 70,999 ha is for industrial wood (round wood) and 11,711 ha, for pole and fuel wood while 3,200 ha was allocated for dedicated biomass energy plantations. NFA has 11,000 ha of own plantation comprising of mainly industrial wood.
- iii. The Local Forest Reserves (LFRs) in the selected study area cover 4,997 ha but have not been utilized fully for forestry purposes as the law requires. The LFRs can be used for dedicated biomass energy plantations since they are small and degraded and some districts like Tororo, Rakai, Rukungiri and Kabarole have already done something.
- iv. By 2015, the total plantation area was estimated to be 106,608 ha (MWE 2015) with 63% established in Central Forest reserves.
- v. Communities have planted woodlots and scattered trees on their lands for fuel wood, but most households remain dependent on the available natural sources of wood which have become scarce and difficult for women and children to access. This has created conflict with the management of protected areas as communities unsustainably cut trees to meet fuel wood needs.
- vi. Farmer managed natural regeneration (FMNR) has been piloted by World Agroforestry Centre in collaboration with World Vision Uganda in the districts of Nakasongola, Kibaale, Kotido and Abim with positive results of regenerating the woodlands and improving ecological conditions in the pilot areas. However this initiative has not been rolled out country wide with clear government policy.

The above interventions by government and private sector have raised awareness on tree planting and efficient biomass utilization technologies and contributed to establishing some biomass dedicated woodlots but this remains very insignificant to the national biomass energy production needs. Biomass production has largely remained a secondary objective of NFA and the private sector in plantation development and

yet it caters for the bulk of the national biomass energy needs especially in the rural areas where most of the population live.

4.6 Policy options for sustainable biomass energy production

There is urgent need therefore to address the rapidly growing problem of disparity in the supply and demand for biomass energy by both the government and private sector. The policy options for overcoming the problem and related barriers include:

- a. *MWE should address the biomass energy production through dedicated large scale biomass plantations in the country using species like bamboo, eucalyptus, Grevillea, Calliandra, Sesbania, Melia, Senna, since they are fast growing*
- b. *MOFPED should provide the private sector with economic incentives like cheap ground rent and soft loans, performance rewards, grants to support investment in dedicated biomass energy plantations and efficient biomass energy production and use technologies.*
- c. *MEMD should integrate issues of biomass production into the policies, plans and budgets of all MDAs that consume or impact negatively on biomass energy resources.*
- d. *MWE and MEMD Strengthen regulation and enforcement of laws, ordinances and byelaws throughout the value chain of biomass energy resources especially charcoal to reduce the loss of forests, raise revenues for re- investment in biomass production and create conducive environment for private sector to invest in biomass energy production.*
- e. *MEMD and MWE assess biomass energy resource and develop biomass database as the basis for decision making and planning of interventions on biomass energy to cover key areas of production, utilization (technologies), financing, population dynamics, and trade and market projections among others.*
- f. *MEMD and MWE support the development and implementation of biomass energy management plans based on the national biomass energy strategy at national, district and sub -county levels.*
- g. *MEMD in coordination with MWE and MAAIF establish regional biomass energy technology dissemination areas/ centres for public awareness education, applied research, standards development, skills transfer and active participation in biomass energy production and efficient utilization.*
- h. *All MDAs responsible for biomass planning, production and use address the challenges that women and children meet in biomass production and utilization with emphasis on affirmative action to support women managed biomass energy plantations, energy saving stoves, affordable alternative bio-energy sources like biogas. There is need to change the society attitude towards the role that women play in the biomass energy subsector through targeted training programs.*
- i. *MEMD should carry out institutional capacity needs assessment for biomass energy in the areas of staffing, training, equipment and funding in order to strengthen the capacity of the institutions responsible for biomass energy production and use especially at the implementation level in the districts.*
- j. *MEMD, should establish a coordination mechanism for the energy sector to include MWE, MAAIF, MGLSD, MLHUD, MST UNCST, MDP (OP) and MoWT for planning, implementation, monitoring and conduct reviews of biomass energy production and use.*
- k. *MEMD, MWE, and MAAIF in coordination with UNCST should promote research and development in biomass energy production and use to address the knowledge, skills and technology gaps in enhancing sustainable biomass production and utilization.*

5.0 Conclusions and recommendations

5.1 Conclusions

The study generated a lot of information and content that can further be used to influence decision making through follow up engagements towards advancing legal timber in Uganda. Besides, some key practical actions (see **Table 3**) were developed with key responsible bodies. These should be implemented to address the major gaps, limitations but also tap into existing opportunities to bring about the desired changes in the forestry sub-sector in Uganda.

5.2 Recommendations

There is urgent need therefore to have policy changes to address the imbalance in biomass energy supply and demand. The policy changes range from technical aspects of biomass production and utilization, fiscal and administrative incentives to capacities of the implementing institutions and beneficiaries. The summary of policy recommendations are out lined:

- i. *Dedicate funds from Government for biomass energy production and develop specific programs to address sustainable biomass energy production and use.*
- ii. *Implement fiscal and administrative policy changes including subsidies, grants and tax waivers and access to affordable land to incentivize private sector investments in biomass energy production and efficient utilization.*
- iii. *Develop and implement sustainable biomass energy production and utilization plans based on the national biomass energy strategy at national, district and sub -county levels. This will require technical support of central government and development partners.*
- iv. *Multi -sectoral approach to address biomass energy issues on production, utilization, value addition, markets and trade with strong coordination mechanisms at national and district levels for implementation.*
- v. *Develop and implement guidelines, bye laws and ordinances on biomass energy with emphasis on empowering the field stakeholders to take more responsibility on biomass energy production and efficient use.*
- vi. *Establish regional biomass energy technology transfer centres coordinated by MEMD but with active participation of key MDAs for public education, standard development, skills transfer and applied research.*
- vii. *Develop an interlinked, reliable and dynamic data base for biomass energy status in the country to support planning, implementation and monitoring of interventions by government and the private sector and integrate biomass energy into other sectors.*
- viii. *Promote research and development in biomass energy production and use to address the knowledge, skills and technology gaps in enhancing sustainable biomass production and utilization.*
- ix. *Address the challenges that women and children meet in biomass production and utilization with emphasis on affirmative action.*

- x. *Carry out institutional capacity needs assessment for biomass energy in the areas of staffing, training, equipment and funding in order to strengthen the capacity of the institutions responsible for biomass energy production and use especially at the implementation level in the districts.*

Fuel wood use is said to be the cause of deforestation and health related pollution. This is not entirely correct because much of the fuel wood is obtained as a result of clearing land for agriculture expansion, settlements, urban or infrastructure development and harvesting of timber and poles. Pollution in households and charcoal production can be averted by application of efficient biomass energy technologies. Biomass is a renewable resource which can be utilized in perpetuity unlike fossil fuels. The success of investments in biomass energy production by government and private sector will be premised on the overall linkage to livelihoods and poverty reduction, existence of sustained demand for biomass energy, market based incentives; climate mitigation, agricultural and industrial production and conducive investment environment in general.

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Box 1. About Environmental Alert

Environmental Alert (EA) was founded in 1988 and has developed and transitioned into a National Non-Governmental organization contributing to an enabling policy environment for sustainable agriculture and sound environment and natural resources management at community, local, national and international levels. EA is officially registered with the NGO Board as a Ugandan non-governmental organization (NGO), incorporated as a company limited by guarantee. EA is governed by an Independent Board that is responsible for providing strategic oversight of the organization including ensuring its integrity as a voluntary service organization.

EA is a 1st prize winner of the Energy Globe Award for environmental sustainability-2005 under the category, earth.

EA is a member of the International Union for Conservation of Nature (IUCN) and a Member of The IUCN National Committee for Uganda.

EA envisions, *'Resilient and dignified communities, managing their environment and natural resources sustainably.'*

EA's mission is to, *'Contribute to improved livelihoods of vulnerable communities by enhancing agricultural productivity and sustainable natural resources management'*

Program and institutional Components:

- a. Environment and Natural resources management;
- b. Food security and Nutrition;
- c. Water, Sanitation and Hygiene;
- d. Finance and Administration;
- e. Resource mobilization and Investment.

Scale of Implementation:

EA operates in selected districts for generation of evidence to inform policy engagements on agriculture, environment and natural resources at National and International levels. Currently EA's operations are in 40 districts across the country. EA undertakes area wide targeted awareness on selected issues in agriculture, environment and natural resources engagements

EA is a Secretariat for following networks:

- a. The Network for Civil Society Organizations in Environment & Natural Resources Sector (ENR-CSO Network) - <http://enr-cso.org/>;
- b. Uganda Forestry Working Group - <http://ufwg.entalert.org/>;
- c. The Standards Development Group (for promotion of Sustainable Forest Management in Uganda); and
- d. Promoting Local Innovation in ecologically oriented agriculture and natural resources management (PROLINNOVA-Uganda Country Platform) - <http://www.prolinnova.net/uganda>;
- e. The Renewable Energy CSO Network.

Further information about Environmental Alert is available at: <http://entalert.org/>