IUCN Eastern and Southern African Regional Office

CONSULTANCY ADVERTISEMENT

Terms of Reference for a Pilot Integrated Food–Energy System (IFES) for Climate-Smart Agriculture in three (3) Micro-catchments in Karamoja Sub-region, Uganda

1 Background

In 2014, the Food and Agriculture Organization of the United Nations (FAO), with funding from the United Kingdom Department for International Development (DFID), contracted International Union for Conservation of Nature (IUCN)[i], and International Institute for Rural Reconstruction (IIRR), to implement components of the project titled: "*Strengthening Adaptive Capacity of Local Governments and Communities in Karamoja to Reduce Impacts of Climate Risk to Livelihoods through Strategic Planning and Response*" in the Lokok and Lokere Catchments in Karamoja, Uganda (Figures 1 and 2 respectively) in line with FAO's Strategic Objective V: "*Increase the Resilience of Livelihoods to Threats and Crises*". The project is strategically designed to directly contribute to Uganda's Catchment Management Framework and builds on past and ongoing initiatives of IUCN and IIRR in collaboration with FAO. In particular, it builds on the pilot Integrated Water Resources Management (IWRM) project work for the Lokok sub-catchment supported by European Commission on Humanitarian Aid and Civil Protection (ECHO), and capacity building initiatives on Community Managed Disaster Risk Reduction (CMDRR) and Community Based Integrated Watershed Management supported by FAO.

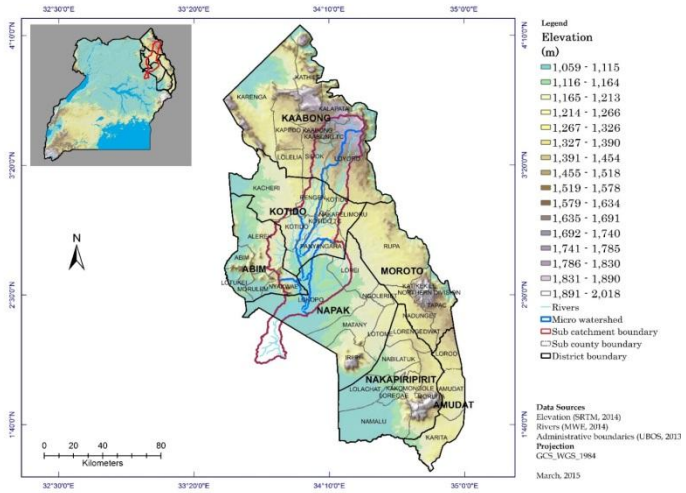

Figure 1: Lokok Catchment

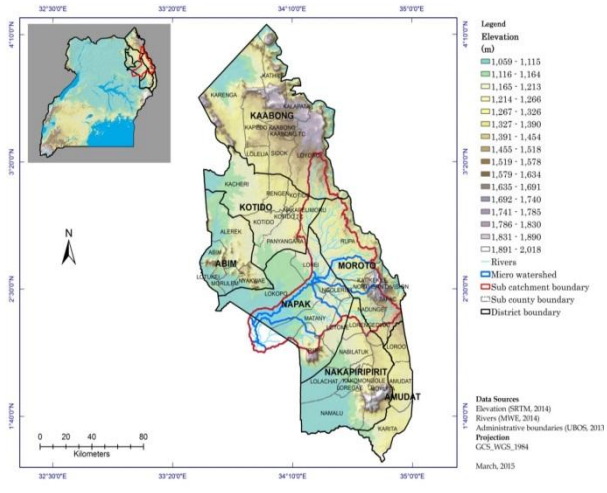

Figure 2: Lokere Catchment

One of the key outputs of this project is a report on the Watershed Assessment and Geospatial Analysis of Lokok and Lokere Catchments. This report identified key challenges in relation to sustainable water resources management in Karamoja. These include but are not limited to: highly

variable and unreliable rainfall; silting of surface water resources; and low storage capacity of the soils and reservoirs. This is majorly caused by human and non-human factors including but not limited to: poor farming methods; overgrazing around watering points and protected kraals; un-controlled bush wildfires; deforestation for charcoal burning, wood fuel, building, construction of kraals, and fences of homesteads. This is compounded by; increasing human population, poor soil texture/structure and weak natural resources management institutional structures. The result has been; soil erosion, reduced soil productivity, poor water quality and reduced surface water sources.

This situation has been worsened by the climate related shocks and risks such as; prolonged dry spells, frequent drought, flooding and flash floods which are increasing in both intensity and frequency. In many areas, the rainy season either starts early or late and generally has become shorter and heavier than in previous years. The increasing risk of droughts resulting from the changing rainfall patterns is, therefore, putting at risk the food and livelihood security of farming and pastoral communities in the Karamoja Region. The combination of these distortions have led to water deficits during planting time, and in some areas heavy rainfall is creating erosion and landslides, resulting in soil erosion and degradation of agricultural lands in the watersheds and rangelands. Consequently, this has reduced the coping ability of an already vulnerable community to socio-economic disasters and climate related shocks and risks.

Based on this background, FAO with funding from DFID made an addendum to the on-going Enhancing Resilience in Karamoja Program (ERKP), number - GCP/UGA/042/UK and launched the Integrated Water Resources Management Project in Karamoja (IWRMK). The IWRMK project proposes to enhance resilience of rural communities in Karamoja and reduce their vulnerability to water related stress factors by implementing participatory catchment-based integrated watershed and rangeland management approaches. The project will provide technical support to the strengthening of water resources and rangeland management and governance frameworks at community level. Increasing the knowledge base for informed decision making in water resources and rangeland management is also among the objectives of the addendum.

The IWRMK project is organized around the following two outcomes and four outputs namely:

A. ***Outcome 1:*** Resilience of Watershed Ecosystems Improved
   i. Output 1.1: Vulnerable micro-watershed ecosystems restored and rehabilitated;
   ii. Output 1.2: Community based rangeland management introduced, and degraded range resources rehabilitated.

B. ***Outcome 2:*** Knowledge and Institutional Capacity for Integrated Water Management Improved;
   i. Output 2.1. Water Governance Frameworks Strengthened, and
   ii. Output 2.2. Water Resources Knowledge Base Improved.

IUCN, with support from FAO, would now like to pilot the establishment of an Integrated Food–Energy System (IFES) for Climate-Smart Agriculture in the three (3) Micro-catchments of Loyoro, Panyangara and Omaniman of Lokok and Lokere catchments in Karamoja, Uganda (Section 3). The Integrated Food Energy Systems (IFES) approach aims at addressing the above challenges by

simultaneously producing food and energy, as a possible way to achieve the energy component of sustainable crop intensification in Karamoja through the ecosystem approach.
This can be achieved in two ways namely: (A) Combining the production of food and biomass for energy generation on the same land, through multiple-cropping systems, or systems mixing annual and perennial crop species, i.e. agroforestry systems combined with livestock production; and (B) Seeking to maximize synergies between food crops, livestock and sources of renewable energy. This is can be achieved by the adoption of agro-industrial technology (such as gasification or anaerobic digestion) that allows maximum utilization of all by-products, and encourages recycling and economic utilization of crop residues.

2 Rationale

The main driver for implementing IFES in Karamoja is the need for food and energy security - the basic requirement for poverty reduction and rural development, but also concerns regarding environmental problems caused by unsustainable agricultural practices. The growing interest in establishing IFES in Karamoja is backed by the general trend towards increased resource efficiency, especially in land use. As a positive side-effect, IFES also addresses several challenges posed by climate change and climate variability through agricultural practices that help to adapt to, and mitigate, the consequences of a changing climate, and reduce dependence of agricultural development on fossil fuels. Integration of food and energy production at both small and large scales has shown many successful results. However, there are fewer successful examples of the more complex and resource efficient systems. Examples of long-term implementation and uptake exist for simpler systems like biogas, but are relatively scarce for more complex IFES operations.

FAO and IUCN strongly believe that, better access to sustainable energies will improve the processes involved in the production of food and increase rural people's opportunities for generating more income in Karamoja. Energy is also necessary for improving health in lieu of the fact that, the health of women and children in Karamoja continues to suffer from unsafe levels of indoor pollution from solid biomass burned for cooking and heating. Better access to energy will reduce the time women spend on collecting fuel wood, allowing them more time for productive farm tasks.

Developing systems that integrate energy and food production can play a large role in making agricultural production sustainable and also "climate-smart": by reducing greenhouse gases, increasing the productivity of land and water resources, easing pressures to clear forested areas and reducing damage to other natural landscapes for agriculture or other purposes. However, to achieve the integrated goals of the IFES approach in Karamoja, IUCN sees a need for clear criteria for decision-making and design of integrated energy programmes at the feasibility, investment and policy development levels.

3 Project sites

This project is being implemented in both Lokok and Lokere Catchments in Kyoga Water Management Zone (Figures 1 and 2 above). The Lokok Sub catchment is located in the districts of Napak (23% of the catchment), Kotido (34%), Abim (9%), and Kaabong (25%) within the Kyoga Water

Management Zone (KWMZ). It covers a total area of 5,491.2 km^2 and is characterized by highlands like Mt. Moroto, Mt. Napak, Mt. Timu and Mt. Morungole, from which the catchments streams originate, to drain their waters into the plains in Napak district, and subsequently into the wide wetlands complex around Lake Bisina in Teso. The Lokere Catchment is located in the districts of Napak (23.1% of the catchment), Kotido (4.8%), Nakapiripirit (2.7%), Moroto (54.1%) and Kaabong (6.7%) (Figure 1). The Lokere Catchment lies within the Kyoga Water Management Zone (KWMZ) and covers a total area of 6,664km^2, and it is characterized by highlands like Mt. Moroto and Mt. Napak from which, the catchment's streams originate, to drain their waters into the plains in Napak district, and subsequently into the wide wetlands complex around Lake Bisina in Teso. The Lokere River is the largest seasonal river defining the catchment. Currently, the catchment provides water to almost 237,223 peoples in Karamoja (UBOS, 2014). Specifically, the project will be inplemented in three (3) micro cachments of: Loyoro, Panyagara and Omaniman.

<u>Loyoro micro-catchment</u>

Loyoro micro-catchment (123,402.07 Ha) straddles the sub-counties of Sidok and Loyoro in Kaabong District and Rengen, Kotido, Nakapelimoru and Panyangara in Kotido District (Figure 3). The biggest area of the micro-catchment is contributed by Loyoro and Panyangara. The total population of the micro-catchment is estimated at 45,376 inhabitants.

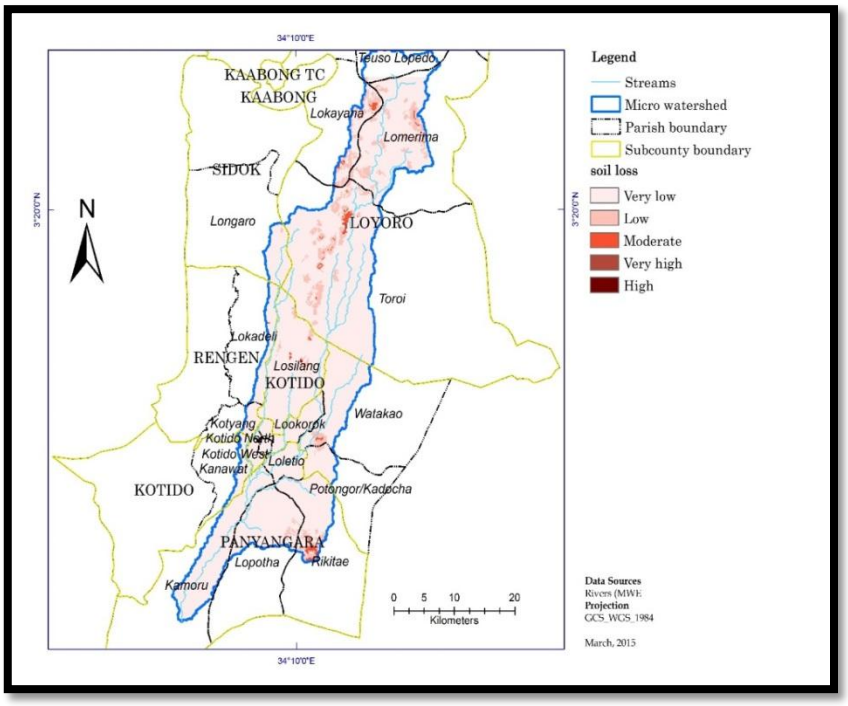

Figure 3: Loyoro micro-catchment

<u>Panyangara micro-catchment</u>

This micro-catchment covers Lokopo and Lopei Sub-counties in Napak District and Panyangara sub-county in Kotido District, with Lokopo being the biggest land contributor (Figure 4). The total population of the micro-catchment is estimated at 36,334 people.

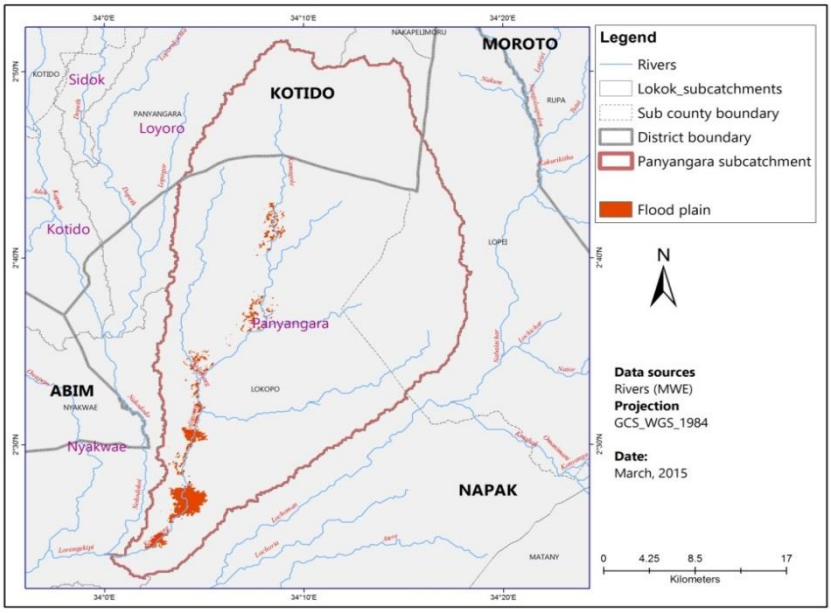

Figure 4: Panyangara micro-catchment

Omaniman Micro-catchment

This micro-catchment covers Lorengedwat Sub-county in Nakapiripirit District, Tapac, Nadunget and Katikekile Sub-counties in Moroto District and, Lotome, Lopei, Lokopo and Ngolereit Sub-counties in Napak District (Figure 5).

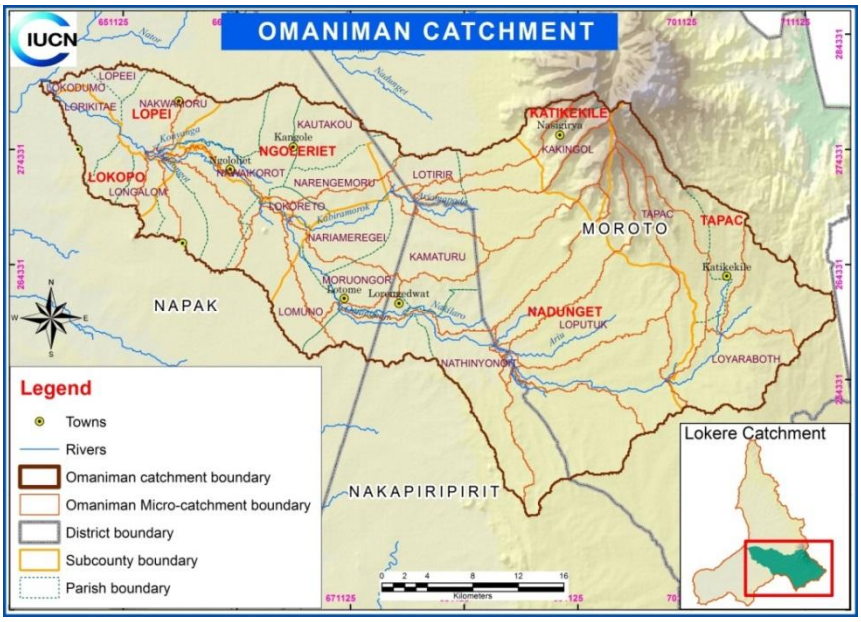

Figure 5: Omaniman micro-catchment

4 Objectives

The specific objectives of this assignment are to:

A. Carry out a **Diagnostic Analysis and Feasibility of BEFS approach** in Karamoja by examining the trends in domestic agricultural markets and domestic food security;

B. Conduct a **Natural Resource Assessment** covering the areas of crops, forestry and water with a view of finding out their feasibility in supporting the BEFS approach in Karamoja in line with the tasks given below;

C. Carry out a **Techno-economic and Environmental Analysis** on IFES approach by generating information on bioenergy production costs and the impact that different bioenergy production pathways have on greenhouse gases (GHG) emissions as explained in the tasks;

D. Carry out a **Socio-economic, Climatic and Soil Analysis** addressing the region-wide challenges, opportunities and climate change related impacts, including a household food security and vulnerability analysis to inform the IFES approach:

E. Carry out a **Risk Prevention and Management Analysis** of the proposed IFES approach and determine its efficacy in fostering both food and energy security, and contribution to agricultural and rural development in a sustainable and climate-smart way:

F. Carry out a **Scooping, documentation and screening the IFES investment options** and making appropriate recommendations for implementation based on the above overall analyses;

G. Develop a **Monitoring, Evaluation, Response and Impact Framework for the IFES** approach; and

H. **Pilot Implementation of the Identified IFES investment Options** in one (1) area in each of the 3 micro-catchments of Loroyo, Panyangra and Omaninman in based on the results of the assessment.

5 Approach, methodology and tools

IUCN and FAO propose to undertake this part of the assignment as a feasibility study supported with a pilot phase. This assignment will be based on the FAO Bioenergy and Food Security Systems (BEFS) Analytical Framework for Sustainable Bioenergy Assessments. The BEFS Approach has two levels to conduct a sustainable bioenergy assessment, which covers the whole bioenergy pathway starting from feedstock availability assessment to energy end use options. There is an initial assessment level named the BEFS Rapid Appraisal and a more in-depth level named the Detailed BEFS. This assessment will follow the Detailed BEFS pathway. The **BEFS Detailed Analysis** covers four main areas: Diagnostic Analysis; Natural Resources Analysis; Techno-Economic and environmental Analysis, and Socio-economic Analysis.

This assignment is designed to cover the broad areas above in a more detailed manner as explained in Section 6 below coupled with a pilot project implementation phase to test the results of the assessment in one (1) area in each of the 3 micro-catchments of Loroyo, Panyangra and Omaninman in Karamoja (see attached maps). The approach and methodology therefore, must expound in detail how each task in Section 6 will be executed in order to meet the objectives given in Section 4 above.

Specifically, the tools that have been developed by FAO under the Bio-Energy and Food Security Systems (BEFS) will be used. BEFS has compiled a set of thirty relevant tools and methodologies that can be used to inform the development of a sustainable bioenergy sector and of sustainable operations. The thirty tools and methodologies can be used to conduct impact assessments, as well as to inform the development of sustainable bioenergy policies, strategies and investments. These science-based tools and methodologies, which can be used by governments, operators and any other interested stakeholders, were selected based on their relevance (especially in terms of applicability to bioenergy), practicality and replicability.

Other tools to be used include the BEFS Operator Level Tool that is linked to FAO databases such as FAOSTAT. The tool builds upon key international references such as the Global Bioenergy Partnership (GBEP) Sustainability Indicators for Bioenergy, the FAO Voluntary Guidelines on the Responsible Governance of Tenure, and the International Finance Corporation (IFC) Performance Standard 5 on Land Acquisition and Involuntary Resettlement.

6 Tasks

The key tasks to be undertaken in this assignment are:

Task 1: To carry out a diagnostic analysis and feasibility of BEFS approach in Karamoja by examining the trends in domestic agricultural markets and domestic food security in the region;

Task 2: To conduct a natural resource assessment covering the areas of crops, forestry and water with a view of finding out their feasibility in supporting the BEFS approach in Karamoja as follows:

a) **Crops**: This includes stakeholders' identification of the areas suitable for bioenergy crop production under different agricultural production systems and levels of inputs. Land is assessed for its suitability for production of the selected crops by taking into account climate, soil and site-specific conditions. Filters are used to exclude areas not appropriate for agriculture (forests, protected areas, inhabited areas and infrastructure corridors) and considering competing uses of land, such as food production, pastures and land requirements of non-agriculture sectors. Overall, this allows stakeholders to structure or revise their land-use planning, while accounting for future bioenergy developments and safeguarding food production and supply.

b) **Forestry**: This may require use of the Wood fuel Integrated Supply/Demand Overview Mapping model (WISDOM), which is a spatially explicit analysis of the supply and demand of fuelwood, forest harvesting residues and wood processing residues.

c) **Water**: The Analytical Framework should carry out water analyses to assess the implications of water in bioenergy development both at product level and water basin (micro-catchment) level. The tools that could be used are the water footprint and the Water Evaluation and Planning system (WEAP).

Task 3: To carry out a **Techno-economic and Environmental Analyses** on IFES approach by generating information on bioenergy production costs and the impact that different bioenergy production pathways have on greenhouse gases (GHG) emissions as follows:

a) The **bioenergy production costs** based on biomass feed stocks, fuel type and different production technologies need to be analyzed. Within the analysis, scenarios need to be identified to determine type and amount of fuel, feedstock, conversion technologies, and who is to supply the feedstock (e.g. smallholders/out growers, commercial estates or a mix of both).

b) The **GHG analysis** to define the GHG balance for the production of biofuels based on the scenarios identified in the production cost analysis. In the case of liquid biofuels, the analysis needs to account for impacts related to potential direct land-use changes and crop-to-crop changes assessed. The analysis also needs to account for the GHG emissions from the processing of biomass to biofuel, and from the transportation of the biomass from field to plant and of the biofuel from plant to market. The analysis should allow the identification of the bioenergy production pathways that can deliver the largest greenhouse gas emission reductions.

Task 4: To carry out a **Socio-economic, Climatic and Soil Analysis** addressing the region-wide challenges, opportunities and climate change related impacts, including a household food security and vulnerability analysis to inform the IFES approach as follows:

a) **Economy-wide impacts:** This includes defining the impacts of developing a bioenergy sector on the economy as a whole including labour, growth and poverty impacts. The analysis builds on the results of the Techno-economic Analysis, bringing them into a region-wide model that includes a detailed breakdown of the agricultural sector and of the other sectors of the economy, namely; feedstock, scale of feedstock production and intensive versus extensive strategies. The assessment should indicate whether the implementation of a new sector, such as bioenergy, can be beneficial for economic growth and poverty reduction in Karamoja by giving policy-makers a sense of how particular bioenergy investments will affect broader development objectives outside of the biofuels sector itself (e.g., national economic growth, household incomes, etc).

b) **Climate change related impacts:** Collection, collation, GIS modelling and analysis of existing climate data and gap filling with daily historical data sets. Based on the results, areas which are likely to experience water scarcity in the 3 micro-catchments need to be identified and appropriate adaptation mechanisms proposed. The impact of climate change on crop yields and likely change in crop yields needs to be estimated for the mid and end century using soil, climate, crop variety and management files to simulate crop yield.

c) **Household Food Security and Vulnerability Analysis**: This will be based on household level survey data so as to assist policymakers in understanding which segments of the population could be vulnerable to food and energy price changes in the region. The analysis should provide evidence that allows the differentiation of households by typology when considering specific safeguard programmes.

Task 5: To carry out a **Risk Prevention and Management Analysis** of the proposed IFES approach and determine its efficacy in fostering both food and energy security, and contribution to agricultural and rural development in a sustainable and climate-smart way through the following analysis:

a) Documenting and analyzing **Good environmental practices** that can be implemented by bioenergy feedstock producers in order to minimize the risk of negative environmental impacts from their operations, and to ensure that bioenergy contributes to climate change mitigation while safeguarding and possibly fostering food security. The good practices are divided into three main groups and this classification could be used.
   i. ***Agricultural management approaches*** (namely Ecosystem Approach, Conservation Agriculture and Organic Agriculture), which provide comprehensive and holistic frameworks and principles of sustainable agriculture.

   ii. ***Integrated, sustainable agricultural and forestry management systems***, namely Agroforestry, Integrated Food-Energy Systems, and Multiple Cropping Systems and Crop Rotation.

   iii. ***Field-level agricultural and forestry practices*** that can be implemented on the ground by bioenergy feedstock producers, such as No- or Minimum Tillage, Integrated Pest Management, and Integrated Plant Nutrient Management.

For each good practice, a detailed description of the key features should be provided, followed by a discussion of the potential environmental and socio-economic benefits associated with its implementation, as well as of the related challenges.

b) Documenting and analysis **Good and socio-economic practices** that can help minimize the risks and increase the opportunities for food security associated with bioenergy operations. The main socio-economic dimensions that may be impacted by bioenergy production and need to be considered, documented and analyzed are:
   i. access to land;
   ii. employment, wages and labour conditions;
   iii. income generation and inclusion of smallholders;
   iv. local food security;
   v. community development;
   vi. energy security and local access to energy; and
   vii. gender equity.

c) **Documentation and analysis of land tenure related issues** in the context of bioenergy development, at both national and project levels with particular reference to:
   i. areas considered for **agricultural intensification** for bioenergy feedstock production;
   ii. areas where a **land transaction** may take place in order to produce bioenergy feedstock; and
   iii. **forest/ rangeland concession** areas.

d) Documenting and analysis **Policy Instruments** that can be used to require or promote good practices in bioenergy feedstock production and to discourage bad practices. These instruments can be grouped into four main categories: (i) mandates with sustainability requirements, (ii) national standards for certification, (iii) financial incentives and (iv) capacity building.

The viability and effectiveness of these instruments will depend on a number of factors, including the financial resources available, and the administrative and enforcement capacity of implementing agencies and this needs to be investigated and recommendation made.

Task 6: **Scooping, documenting and screening the IFES investment options** and making appropriate recommendations for implementation of the identified investment options based on the above overall analyses

The consultant needs to provide an indication of the potential risks and benefits for food security from agricultural/bioenergy investments by screening proposed investments and evaluating the proposed investments. The tools that are going to be used for the screening and evaluating the options need to be explained in details and their linkage to key international references such as the Global Bioenergy Partnership (GBEP) Sustainability Indicators for Bioenergy, the FAO Voluntary Guidelines on the Responsible Governance of Tenure, and the International Finance Corporation (IFC) Performance Standard 5 on Land Acquisition and Involuntary Resettlement needs to explained and elaborated.

Tsk 7: Development of **Monitoring, Evaluation, Response and Impact Framework** for the IFES approach

In order to ensure that bioenergy development is environmentally and socio-economically sustainable and that it fosters food security, we need to identify, prevent and manage the risks associated with this development. The BEFS Approach includes tools that can be used for this purposes that need to be customized to the local context (Karamoja) and **Monitoring, Evaluation, Response and Impact Framework** developed with national M&E, Response and Impact linkage.

Tsk 8: ***P*iloting the implementation of the identified IFES investment options** in one (1) area in each of the 3 micro-catchments of Loroyo, Panyangra and Omaninman in Karamoja (see attached maps) based on the results of the assessment.

7 Duration and Time Frame

The entire work is expected to take a total of 60 billable working days spread over a period of 4 (four) months from 15th August to 14th December, 2016. This period includes desk work, field work and reporting. IUCN, FAO and other partners will participate in the awareness raising activities as well as providing logistical support to the process.

8 Expected deliverables

A. Inception report including detailed plan of action with detailed framework of activities, methodology to be applied, schedule, etc.

B. Draft technical assessment reports detailing the outputs of all the tasks above and the attendant recommendations for implementation to wit:
   i. Diagnostic Analysis and Feasibility of BEFS approach
   ii. Natural Resource Assessment
   iii. Techno-economic and Environmental Analysis
   iv. Socio-economic, Climatic and Soil Analysis
   v. Risk Prevention and Management Analysis
   vi. Scooping, documentation and screening of IFES investment options
   vii. Monitoring, Evaluation, Response and Impact Framework for the IFES
   viii. Pilot Implementation of the Identified IFES investment Options

C. Draft strategy and action plan for piloting imlementation of the IFES approcah in Lokok and Lokere Catchments.

D. Presentation to regional stakeholders' workshop on draft report and strategy.

E. Final report incorporating comments and suggestions given by stakeholders and IUCN and FAO technical teams on the draft report.

F. Report on the pilot IFES approach implementation phase with supporting documentary evidence.

G. Booklet on lessons learnt and best practices in implementing IFES approach and ensuring sustainability

9 Requirements

Qualifications and professional experience

A. Master's degree or higher in environmental management, business, agronomy, or equivalent work experience;
B. 10-15 years of experience working on agricultural conservation issues, in particular experience working with farmers and members of the agricultural community and an understanding of the Arid and Semi-Arid Lands (ASAL) commodity agricultural supply chain, including key actors and incentives;
C. Experience in bioenergy resource and energy demand assessment;
D. A working knowledge of the current theory and practice of IFES and the role energy can play in solving environmental problems;

Professional experience and proven ability

Working knowledge of FAO's Bioenergy and Food Security Systems (BEFS) Analytical Framework for Sustainable Bioenergy Assessments and being able to:

A. Carry out a Diagnostic Analysis and Feasibility of BEFS approach;
B. Conduct a Natural Resource Assessment covering the areas of crops, forestry and water with a view of finding out their feasibility in supporting the BEFS approach;
C. Carry out a Techno-economic and Environmental Analysis on IFES approach by generating information on bioenergy production costs and the impact of different bioenergy production;
D. Carry out a Socio-economic, Climatic and Soil Analysis addressing the region-wide challenges, opportunities and climate change related impacts, including a household food security and vulnerability analysis to inform the IFES approach:
E. Carry out a Risk Prevention and Management Analysis of the proposed IFES approach and determining its efficacy in fostering both food and energy security:
F. Carry out a Scooping, documentation and screening the IFES investment options;
G. Develop a Monitoring, Evaluation, Response and Impact Framework for the IFES approach; and

Familiarity with:

A. BEFS Operator Level and FAOSTAT Tools;
B. Global Bioenergy Partnership (GBEP) Sustainability Indicators for Bioenergy;
C. FAO Voluntary Guidelines on the Responsible Governance of Tenure; and
D. International Finance Corporation (IFC) Performance Standard 5 on Land Acquisition and Involuntary Resettlement.

9 How to apply

Interested Firms/Individuals are requested to submit separate technical and financial proposals stating the assignment applied for, along with an application letter outlining knowledge, competencies, skills and past experience in undertaking the tasks mentioned above to IUCN office during office hours at the email address below. The technical proposal should give all details of the methodology/approach to be used in each task, as well as, the timing and/or scheduling for each task. The financial proposal should indicate how much the entire assignment will cost in terms of professional fees, reimbursable costs and transport costs. The letter of expression of interest should be accompanied with:

A. Samples of previous similar works;
B. Firm/Organization track record (profile); and
C. Signed and dated Curriculum Vitae of proposed assigment team.

Please send your full proposal electronically to IUCN Uganda Country Office (uco@iucn.org) by 14 August 2016

Quality and cost basis selection will be employed to evaluate and select the consulting firm. Technical proposal carries 80% marks and financial proposal carries 20% marks.

---

[i] *IUCN, International Union for Conservation of Nature, helps the world find pragmatic solutions to our most pressing environment and development challenges. IUCN's work focuses on valuing and conserving nature, ensuring effective and equitable governance of its use, and deploying nature-based solutions to global challenges in climate, food and development. IUCN supports scientific research, manages field projects all over the world, and brings governments, NGOs, the UN and companies together to develop policy, laws and best practice. IUCN is the world's oldest and largest global environmental organization, with almost 1,300 government and NGO Members and more than 15,000 volunteer experts in 185 countries. IUCN's work is supported by almost 1,000 staff in 45 offices and hundreds of partners in public, NGO and private sectors around the world. IUCN's Eastern and Southern African (ESARO) region comprises 24 countries in the Horn of Africa, eastern and southern Africa and the western Indian Ocean namely: Angola, Botswana, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, Somalia, South Africa, South Sudan, Sudan, Swaziland, Rwanda, Tanzania, Uganda, Zambia and Zimbabwe.*
www.iucn.org