Terms of Reference (TOR) For Biodigester Sector Survey 2023 in Uganda

1.0. Background Information.

SNV is a not-for-profit international development organization that applies practical know-how to make a lasting difference in the lives of people living in poverty. We use our extensive and long-term in-country presence to apply and adapt our top-notch expertise in agriculture, energy, and water to local contexts. SNV has over 1,600 staff in more than 20 countries in Asia, Africa, and Latin America. We are proud to be a not-for-profit organization that uses project financing to implement our mission. This requires us to work efficiently and to invest in operational excellence.

In its new Strategic Plan period (2022-2030), SNV will aim to deepen partnerships with financial institutions, governments, and private sector to expand our impact driven finance portfolio. We will continue to position ourselves as a premium organization and invest in making knowledge flow to and from the frontline and catalyse partnerships that transform the agri-food, energy and water systems which enable sustainable and more equitable lives for all. For more information on SNV's operations, visit our website: www.snvworld.org.

1.1. Project Description.

The African Biodigester Component (ABC) is a 5-year project aiming to support the growth and sustainability of a commercial biodigester sector in Sub-Saharan Africa. The Project objective is to develop the biodigester market and enable its operation and scaling beyond the project intervention to autonomously increase access to biodigester technology. The project target is to provide renewable energy access to 40,000 people through the installation of 8000 small scale biodigesters. In addition, these digesters will return 46,000 tons of organic fertilizer (bio-slurry) to increase agricultural production on 36,000 farms. ABC Uganda is implemented by a consortium led by Netherlands Development organisation (SNV), responsible for the overall project management and stakeholder coordination, financial and technical support to and cooperation with Biogas Solutions Uganda Limited (BSUL). SNV leads the design and oversees execution of the supply and demand sides' project strategies. GIZ, through Energising Development (EnDev) Uganda, is coordinating the project's enabling environment interventions including undertaking key sector and policy assessments to inform relevant capacity building activities for selected sector associations, and support (advocacy for) policy formulation and development of regulations and sector and technology standards.

Project objective: To develop the biodigester market and enable its operation and scaling beyond the project intervention to autonomously increase access to biodigester technology.

Expected Project impact.

1. Increased utilization of bio-digesters results in reduction of greenhouse gas emissions and increase socio-economic developments-through improved access to energy, improved health, fuel, savings, time savings, improved soil quality, increased yields, savings on chemical fertilizer and pesticides, improved waste management and/or increased employment.
2. Increased level of market development resulting in markets that continue to operate and scale beyond the intervention and autonomously increase to bio-digester technology.

Project goal/outcomes

- Demand side strengthened, increasing numbers of smallholder farmers purchasing and using biodigesters.
- Increased and sustained supply of biodigesters of various technologies and good quality by enterprises
- Enabling environment strengthened; domestic biodigester sector is supported by enabling policies, regulations, standards, tax regimes and access to finance.

The Biodigester Sector Survey

Biodigester technology has two co-products – biogas and bio-slurry. The technology has significant potential to provide a clean and sustainable solution to growing energy demands in Uganda, while securing a high value fertiliser that can reduce or replace use of chemical fertilisers. Exploitation of biogas resource can reduce perennial

dependence on expensive fossil fuel, while it enhances local and global environmental quality, health, and sanitation (through toilet construction and connection). It also saves cooking related time and reduces cooking related drudgery, particularly for women and girl children. It provides clean jobs and promotes rural enterprise development. With use of bio-slurry, it improves soil health and increases agriculture production. Success factors for the biodigester technology include socio-economic perception and veracities of the farmers and other stakeholders, availability of feedstock e.g., cattle dung, appropriate or acceptable products, awareness about the products, access to the products (through market), affordability and effective leadership as well as enabling policy and regulatory environment.

The ABC consortium desires to implement annual biodigester sector surveys to understand the sector (biodigester) supply, demand, access to finance, gender and inclusion situation, biogas and bio-slurry utilisation pattern, users' satisfaction, sector actors' performance and the policy and regulatory environment. The Survey will help to estimate the socio-economic impact of biodigesters such as, such as improved saved time and reduced drudgery, improved health and sanitation, improved gender, and inclusivity, increase in income and/or saved costs, and others. The survey will also estimate the local (avoided deforestation) and global environmental (reduced GHG emissions) impacts.

As part of the assessment of the project impact on the market development, this annual biodigester sector surveys are conducted to assess the development of the biodigester industry to enable further planning, and delivery of the project. This is the first of its kind for the project and it is planned to feed into the Energy Access Market Development (EAMD) score card[1].

1.2. Purpose of the assignment

The overall purpose of the assignment will be to measure the biodigester market development in a longitudinal and comprehensive way, around demand, supply, financing, inclusion, enabling environment as well as around usage, functionality, user satisfaction, actor performance and socio-economic and environmental impacts.

For clarification, the Biodigester Sector Survey (BSS) is part of the ABC Monitoring, Evaluation, Learning and Reporting Framework (MELR). The MELR Framework foresees that evaluations will be conducted as i) Baseline, ii) User surveys (end of each year), and iii) Final evaluation (end of year 5). The Survey and sample designs will enable comparisons of the baseline information with user surveys and the Final evaluation. Important gender and inclusivity mainstreaming indicators will be central to the Survey design and methodology.

1.3. Specific objectives of the Biodigester Sector Survey

1) Provide information to verify the 2018 EAMD scorecard and therewith provide data for a solid EAMD zero-measurement in general and on relevant sections of the EAMD scorecard in particular.
    - Demand.
    - Supply.
    - Enabling environment.

2) Assess a representative sample of ABC digesters (functionality, operation, biogas usage and bio-slurry application, perceived benefits), measure the user satisfaction of the owners using the Net Promoter Score (NPS) methodology and estimate the socio-economic impacts.

3) Feed into annual carbon verification process by collecting other necessary data on type of biodigester in use, plant size, wood, and charcoal use, etc. from 150 randomly sampled households.

4) Map the biodigester market landscape in Uganda, including existing suppliers (updated production, type of biodigesters and appliances, area of operation) and required ABC project support to suppliers or Biodigester Enterprise or BEs plus the status of access to finance/credit for end-users and the BEs. Gender equality and social inclusion will also be assessed.

5) Collecting feedback for further improvement of the project actors and project performance, including around coordination and communication.

2.0. Scope of Work

[1] EAMD is a tool used for assessment of the status of the market development in different dimensions (demand, supply and enabling environment)

The focus, and depth of the survey will be in line with the overall purpose of the survey as well as the specific objectives assessing the biodigester sector, its operations, and all factors critical to its success. Three key themes are critical for this scope ie. **Demand, Supply** and **Enabling environment** and should be covered during the survey. Overall, the BSS will cover the entire country, and not limited to the following.

1. **The farming system: technical and socio-economic data**

- The farming system before the installation of a biodigester and at the time of the survey
- Income and expenditure before the installation of a biodigester and at the time of the survey
- Allocation of labour for farming and non-farming activities, including for determination of time saving and use of saved time.
- Energy sources and use, with detail questions for determination of reduction or replacement of firewood, charcoal, dung cake, etc. to determine the GHG emission reduction for carbon credit establishment.
- Use of fertilizer (organic fertilizer from the biodigester)
- Household sanitation situation (before and after)
- Assessment of the most important problems addressed by biodigesters in the household.

2. **The Biodigester: technical and socio-economic information**

- Biodigester type, size and month and year of installation
- Costs and size of the biodigesters, construction time and financing
- Technical assistance, training
    - Reception of assistance and training areas
    - Awareness creation modalities
    - Quality assurance, including after-sale service, spare parts and warranty.
- Performance of the biodigester
    - Biodigester quality installation, operation, and functionality
- Inputs: Dung and organic waste feedstocks
- Outputs and benefits: Biogas and Bio-slurry usage/application, sufficiency
- Gender equity and social inclusion situation, in both supply and demand sides

3. **Motivation and decision making**

- Decision making by biodigester households.
- Motivation for acquiring a biodigester.
- Client satisfaction

4. **Bio-slurry entrepreneurship**

- Details on usage pattern of bio-slurry – liquid and/or dried, after composting (fresh or dried compost)
- Perception and facts about the use and benefits of bio-slurry
- Challenges and opportunities in use of bio-slurry e.g., perception issues, improved yield achieved, etc.
- Are there any innovative use of bio-slurry existing out there?
- Common practices in the management and application of bio-slurry
- Existing business opportunities in the bio-slurry e.g., bio-slurry sale

5. Biodigester market maturity

- Improvement of the end user business case through increased valorisation of organic fertilizer in cooperation with existing agricultural programs
- Increased access to finance for end users and enterprises
- Increased focus on strengthening biogas enterprises and the biogas business case through business development services.
- Increased support for suppliers of prefabricated biogas technology to facilitate scaling of markets.

2.1. Key people to collaborate with during the Biodigester Sector Survey (Target audience).

The BSS survey will target to consult government officers from related agencies of MEMD, MAAIF and Sector players (associations) such as energy agencies staff, agriculture officers, organizations promoting biodigester technology, financial institutions (including SACCOs, if possible), entrepreneurs and companies dealing in biodigesters, and community leaders among others.

Women will be involved as respondents and enumerators in conducting the Biodigester Sector survey to best assess the inclusiveness in the biodigester activities.

The Survey will also interview the randomly sampled households, selecting a matured family member of the household, knowledgeable about the use of the biodigester. The Consultant(s) shall use participatory methods involving the target audience.

2.2. Biodigester Sector Survey questions

The consultant(s) are encouraged to structure the Biodigester Sector Survey questions according to this ToRs. The BSS framework will be agreed upon with SNV-ABC team before, the consultant it is deployed for the assignment. It is very important that the consultant (s) demonstrate how they followed and understood the survey requirements and how the definitions are understood and applied within the broader context and read in conjunction with other principles and guidance on how to conduct such a Biodigester Sector survey, in ways that will be useful and of high quality. Ensure also to demonstrate how the Biodigester Sector Survey methodology, questionnaire and result supports learning through generating and feeding back findings and lessons.

2.3. Biodigester Sector Survey methodology

This assignment will use a mixed-methods approach. Therefore, consultant(s) are required to present in the Inception Report a Biodigester Sector Survey framework, implementation plan, team composition with clear responsibility and as well define the methodology and draft survey questionnaire to be used. These should be always rigorous yet proportionate and appropriate to the context of this survey. Participatory methodologies are preferred.
The proposal and consulting team should demonstrate how participatory methods will be used and adapted to the Uganda context, which demands a high level of collaboration, flexibility, cautiousness with communities, among other respective Government authorities, meant to support the development of the biodigester sector.

Other key considerations in Survey Design, Implementation, and data analysis

The BSS consultant(s) should consider the following key technical issues in the design, implementation, and analysis of the survey data:

- Avoid non-probability sampling approaches.
- Where the survey aims to produce disaggregated data on specific sub-populations, the consultant should consider oversampling underrepresented sub-populations, as a means of increasing sampling efficiency.
- Where the sampling approach results in differing selection probabilities, ensure the application of weights at the analysis stage for an unbiased inference from the sample to the population.
- Align the tools with international statistical standards and methods, wherever possible.

2.4. Limitations

Due to the complex nature of the survey, some physical interactions with respondent may be limited, some interviews may be conducted, virtually. The level of non-responsiveness should be contained within the margin of error to avoid compromising some contribution/responses by the target groups towards the Biodigester Sector Survey findings.

2.5. Indicative materials to review.

Relevant documents to review may include available materials on the biodigester technology/ies in Uganda, the ABC Uganda project proposal and annual reports the biogas sector and related policies, strategies, plans, guidelines and standards, and additional relevant documents e.g., similar survey reports or questionnaire from biodigester projects in Uganda or beyond.

3.0. Contractual and reporting arrangements

3.1. Profile of the consultant(s)-Consulting firm

The Biodigester Sector Survey will be conducted by an independent consulting team, who will work in close collaboration with SNV-ABC Uganda team.

The consultant(s) should be a suitably qualified and experienced individuals (appropriate mix of knowledge, and skills as well as experience required to execute the survey with the proposed methodology). The consultant(s) profile should have the following attributes among others.

1. A research specialist as the **Team Leader** of the consulting team, with a minimum of master's degree with minimum of eight years' experience in renewable energy or similar rural energy or water or hygiene infrastructure research in a local and international development context. Research experience in biodigester sector will be an advantage. Often a mixed approach that incorporates the technical skills of a research specialist but includes inputs from a sector specialist is most effective.

    - He or she must have a strong background conducting Biodigester Sector or similar energy studies, experience of longitudinal and results-based research and demonstrated capabilities and experience working or conducting donor funded development Biodigester Sector or similar research studies.
    - He or she must have demonstrated ability to design and execute high quality Biodigester Sector or similar energy or other longitudinal survey approaches and methodologies, including quantitative and qualitative research methods.
    - He or she must have a proven ability to meet deadlines and respond to requests and feedback provided timely and appropriately. Ability to provide practical conclusions and strategic recommendations to key actors/stakeholders is very important.

2. Other team experts required in design and implementation of the assignment must have a minimum of bachelor's degree and minimum of 3 years of relevant experiences in conducting such surveys or research. Field enumerators or call agents must have minimum of high school education and minimum of one year of relevant experience.
3. Consideration of the extent to which the consultant or consulting team has appropriate country knowledge. This includes language proficiency to conduct the survey required or that resources be available e.g., translators to enable the survey to go on smoothly.
4. Be willing to sign a contract after a satisfactory inception report has been provided and accepted and not before, and willing to demonstrate that they can work within the tight timelines of the assignment.

Note:

1) While the consultant(s) shall be nominated, they must not have undeclared conflict of interest with ongoing project activities of SNV, in general terms and specifically with SNV ABC Uganda staff.
2) The consultant or consulting team must have women representation, to avoid gender biases or blindness.

3.2. Management arrangements

The Biodigester Sector survey will be commissioned and managed by MEMD and SNV-Uganda project manager, who will oversee the design and implementation and quality of the Biodigester Sector survey. The government partners - MEMD and MAAIF will also support to supervise the assignment. The consultant(s) shall be expected to name their research team; with clear qualification and experience supported by their updated CVs. The consulting team shall be supported and work closely at the operational level with SNV ABC-Uganda project staff, particularly the M&E Advisor. The external consultant(s) will report to the Project Manager-SNV ABC Uganda. SNV-ABC Uganda will have the following responsibilities to assure the quality of the data produced.

Debrief the consultant(s) during inception to ensure roles, responsibilities and scope of the consultancy is clear and will be guided by the point of contact(s) within the organisation for the duration of the Biodigester Sector survey process. The organisation shall also provide technical support to facilitate required meetings and interviews, where possible, otherwise it is expected that the consultant(s) will take initiatives to map and find respective.

respondents. The Biodigester Sector survey commissioning entity (SNV Uganda) shall ensure that relevant stakeholders

are kept informed and engaged, and regularly monitor and assess the quality of the Biodigester Sector survey and its process. The final report and all deliverables related to the Biodigester Sector survey shall be submitted to SNV ABC Uganda Project Manager, as per the agreed template, level of details and the milestone schedule.

Responsibilities of SNV-ABC Uganda

- Contract the consultant.
- Debrief on the ABC Uganda project and cross boarder activities.
- Provide project specific and other relevant resource documents.
- Facilitate access to survey areas.
- Coordinate and organise a workshop for dissemination of survey findings and validation (if relevant).
- Review draft Biodigester Sector Survey inception report and draft BSS final and approve the inception report and final report.
- Pay the consultant based on the agreed terms and conditions specified in the expression of interest.

Responsibilities of the Consultant

- Design the Biodigester Sector survey.
- Develop and present inception report. The inception report must have a clear team with roles and responsibilities plus activity timeline. Any change in the team shall be formally agreed with SNV-ABC Uganda Project Manager, with a proposal submitted in writing with the CV of the new member coming in.
- Collect and analyse data.
- Produce draft report.
- Facilitate research findings and validation workshop (if relevant).
- Produce final Biodigester Sector survey report, together with all the data and analyses produced in connection with the report. All the documents should be in MS Word and Excel and the final report should also be in PDF format.

3.3.0. Final Deliverables and timeframe

The Biodigester Sector survey consultant(s) will submit the final report to SNV-ABC Uganda after validating findings with the stakeholders, if required, accordingly. SNV-ABC Uganda will further discuss the report internally with relevant teams, and in turn, submit it to the respective final recipient within the stipulated timeframe of the survey. The main body of the report (draft and final version) must be limited to 50 pages (excluding annexes). One of the annexes should consist of a table which summarizes the findings according to the Biodigester Sector survey framework. The Biodigester Sector survey is expected to be complete within 90 working days or 128 total days. The consultant(s) are required to propose and demonstrate a detailed and feasible Biodigester Sector survey schedule, within which to accomplish the research, the workplan will be reviewed to assess its suitability during the proposals analysis.

3.3.1. Summary of key deliverables

The inception, draft final report and final report shall be prepared in British English, using Microsoft Word, properly edited and submitted in soft copies. The final report shall also be submitted in PDF format and a hard copy (if necessary). All primary data collected, and analysis conducted for the purpose of this survey will remain the property of SNV and must be submitted, electronically and in a clear and comprehensible format in Microsoft Excel/SPSS/EpiData and MS-Word/Nvivo (for qualitative data).

1. A precise inception report not exceeding 20 pages excluding annexes.
2. Draft Biodigester Sector survey report.
3. All data collection tools applied.
4. All collected and cleaned raw data sets including pictures, videos, or recordings.
5. Final Biodigester Sector Survey report, not exceeding 50 pages, including annexes.

Requisite administrative (documents) Requirements

- Requisite administrative (documents) Requirements
- Recent tax clearance/Tax compliance certificate issued not earlier than June 2023.
- Certificate of registration including Tin number and certificate of incorporation.
- Valid trading license/ operating permit
- Articles and memorandum of association clearly showing directors.
- Company profile including physical address of the offices

4.0. Reporting format (Tentative to be further revised during the inception phase and final reporting phase)

To ensure consistency and completeness, the following draft report structure should be used for reporting.

Executive Summary

Introduction

- Purpose of the Biodigester Sector Survey.
- Organisation context.
- Logic and assumptions of the Biodigester Sector Survey.
- Overview of SNV-ABC funded activities.

Biodigester Sector Survey Methodology

- Biodigester Sector survey plan.
- Strengths and weaknesses of selected design and Biodigester Sector survey methods.
- Any limitations of the assignment
- Summary of problems and issues encountered.

Findings

- Overall Biodigester Sector survey findings,
- Assessment of accuracy of reported results about biodigester technology/sector in Uganda
- Biodigester Sector survey findings clearly indicated under specified headings/objectives, reported in line with the specific objectives and other details mentioned in the ToR.
- Lessons learnt (ABC Uganda project management, biodigester entrepreneurs' operations, user satisfaction, technology design, market development and sustainability, etc.)

Conclusions

- Summary of findings against Biodigester Sector survey questions.
- Summary of learnings gathered or captured.

Recommendations

Annexes (such as)

- Biodigester Sector survey terms of reference.
- Details of the consulting team with responsibility division
- Biodigester Sector survey schedule.
- Biodigester Sector survey framework.
- Data collection tools.
- List of people consulted and or interviewed, with their organisation, if applicable and address plus contact telephone.
- List of supporting documentary information e.g., pictures, recordings, videos etc.
- Organisational response to reported findings and recommendations.

5.0. Scoring criteria

The evaluation of proposals received will be on a point-based system and will be done progressively as follows.

- Administrative evaluation.

This will be based on pass/ fail basis. Only those that pass administrative criteria will Progress to technical evaluation.

- Technical evaluation
  This will be scored out of 80. Only those that score an average above 40 will progress to financial evaluation.
- Financial evaluation
  This will be scored out of 20

6.0. How to apply

Interested and qualified consultants who meet the above requirements are asked to submit the following.

1. A narrative/technical proposal which should include consultant(s) clear, detailed understanding and interpretation of the TORs, a thorough methodology and detailed team composition and the work schedule..
2. A financial proposal indicating details of the fees for the consultancy and applicable taxes.
3. Updated CVs/Profiles of not more than 4 pages that clearly show the qualification and experience of the lead consultant(Team Leader) and his/her team.
4. Contacts of three organisations recently worked with-clearly similar work.
5. Technical proposal content should not exceed 20 pages (Times New Roman font 11 should be used) and financial proposal should not exceed 2 pages.
6. Annexes and cover pages/information not requested or asked for should not be attached to the proposals.
7. Please strictly adhere to the ToRs requirements and application procedure. Your proposal will not be considered if the ToRs requirements and application procedure have not been adhered to and should be submitted once in Microsoft word format or portable document file only.
8. Any late submissions shall not be considered.

Deadline for submissions

Applications should be sent no later than 10th August 2023 at 5 **pm East African time**.

The technical and financial proposal should be sent separately through email; ugandatenders@snv.org Please include consultancy-BSS-ABC-UG in the subject.

Call disclaimer.

SNV reserves the right to either accept or reject any or all applications submitted. SNV can stop this procurement at any time without need to give explanation or can extend the deadline for submission once it sees it fit. In case you do not hear from SNV within 3 weeks of closure of application process, consider yourself unsuccessful. SNV also reserves the right to reject and cancel this call-in case any illegal, corrupt, coercive, or collusive practices are noticed. Late applications will be rejected. Please note that viewing, downloading or otherwise using the TOR constitutes acceptance on your part of all the above noted statements and conditions.