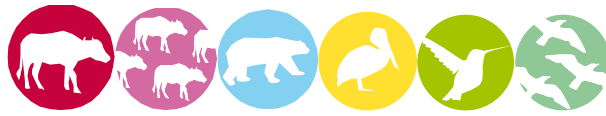


ANNEX R – PASSPORT TEMPLATE

CONTENTS



- A. Project title**
- B. Project description**
- C. Proof of project eligibility**
- D. Unique Project Identification**
- E. Outcome stakeholder consultation process**
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- G. Sustainability monitoring plan**
- H. Additionality and conservativeness deviations**

- Annex 1 ODA declarations**

SECTION A. Project Title

[See Toolkit 1.6]

PoA Title: African Biogas Carbon Programme (ABC)

VPA Title: African Biogas Carbon Programme (ABC) – Tanzania – CAMARTEC - VPA004

Date: 27/06/2016

Version no.: 1

SECTION B. Project description

[See Toolkit 1.6]

In many developing countries the dependency on firewood and charcoal as a source of energy is very high¹, with around 3 billion people combusting solid fuels on open fires to meet their cooking and heating needs². As a result, indoor air pollution is one of the ten major threats to health globally, causing almost 2 million deaths annually due to solid fuel use³. The burning of firewood that is illegally collected and the production of charcoal also contributes to the emission of greenhouse gases and deforestation or forest degradation.

Biogas digesters allow the production of sustainable fuel from organic waste through anaerobic digestion. The biogas can be used as a clean source of cooking fuel (Figure 3) while the slurry from the digester is a very good fertiliser (Figure 4).

The *African Biogas Carbon Programme (ABC)* will operate following the rules and regulations of the Gold Standard as a Programme of Activities (PoA). Tanzania is the host country for VPA4 of the PoA. The programme is developed as part of the African Biogas Partnership (ABPP) with support from Hivos and SNV. The programme aims to install biogas systems with stoves in households, small and medium enterprises (SMEs) and communities that are currently using non-renewable biomass and fossil fuels as their main source of cooking fuel. The biogas systems are fed with manure, which is anaerobically digested to produce renewable biogas. The biogas produced will replace the combustion of non-renewable biomass and fossil fuels, thereby reducing carbon dioxide (CO₂) emissions, and also reduce methane (CH₄) emissions by diverting manure that would otherwise decompose in open pits, emitting methane.

The emissions reductions achieved through the PoA will generate carbon credits, the revenue from which will be used to subsidise the biodigesters and biogas stoves, making them more affordable for use in households, SMEs and communities.

The diagrams below illustrate how a biogas digester looks in practice.

¹ Food and Agriculture Organization: *Forests and Energy*, Rome: FAO. (2008)

² World Health Organization: *Indoor air pollution and health*, Fact sheet No. 292: WHO (2011)

³ World Health Organization: *Indoor air pollution and health*, Fact sheet No. 292: WHO (2011)



Figure 1: Fixed-dome biogas digester built into the ground



Figure 2: Biogas outlet from which biogas is fed into the household, ready for use



Figure 3: Biogas used for cooking



Figure 4: Slurry outlet. Slurry can be applied to agricultural land as a fertilizer.



Estimated start date of the project (VPA): The starting date of this programme activity is 01/01/2017.

SECTION C. Proof of project eligibility

C.1. Scale of the Project

[See Toolkit 1.2.a]

Please tick where applicable:

Project Type	Large	Small
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	<input type="checkbox"/>
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C.2. Host Country

[See Toolkit 1.2.b]

Tanzania

C.3. Project Type

[See Toolkit 1.2.c and Annex C]

Please tick where applicable:

Project type	Yes	No
Does your project activity classify as a Renewable Energy project?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Does your project activity classify as an End-use Energy Efficiency Improvement project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does your project activity classify as waste handling and disposal project?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Please justify the eligibility of your project activity:

According to Gold Standard v2.2 rules, the eligibility of the project activity is defined by a number of aspects. The justification of the project eligibility criteria are discussed as follows:

Scale of the project activity: The VPAs within the PoA remain within the CDM small-scale thresholds. The PoA applies the Gold Standard's methodology 'Technologies and Practices to Displace Decentralized Thermal Energy Consumption' (version 2.0). The SSC-VPA's aggregated power capacity remains below 45 MW_{th} throughout the crediting period.

Host country or state: The second VPA is located in Tanzania. Tanzania is listed as a non-Annex 1 country and is not a country with a cap on greenhouse gas emissions.

Type of project activity: The proposed project activity falls both under renewable energy project and waste handling and disposal category. Additionally, according to the Guidance on Project Type Eligibility from the Gold Standard revised Annex C rules, it classifies under the improved distributed heating and cooking devices and distributed micro-scale electricity generation units.

Greenhouse gases: The project activity involves reduction of methane (CH₄) and carbon dioxide (CO₂) gases. CH₄ and CO₂ gases are included in the project boundary and this is eligible under the Gold Standard.

Official Development Assistance: According to the Gold Standard's rules, a project is not eligible under the Gold Standard registration if it receives ODA under the condition that credits coming out of the project are transferred, directly or indirectly, to the donor country requirements. The VPA has received support from the Directorate General for International Cooperation (DGIS) under the Netherlands Ministry of Foreign Affairs provides public funding. The SSC-VPA is being supported by DGIS through two Dutch development NGOs, the Humanist Institute for Cooperation with Developing Countries (Hivos) and the Netherlands Development Organisation (SNV). There has been no diversion of Official

Development Assistance (ODA) as demonstrated in the declarations provided from all parties.

Other certification schemes: The project will not claim any other certificate and thus there is no double counting that would arise from the issuance of Gold Standard carbon credits.

Carbon rights transfer from end users: The end user of each biogas digester will agree to transfer all rights to any carbon credits to the VPA Implementer as part of the Sales Agreement. The CME will be the focal point with the Gold Standard Secretariat and will receive the VERs generated. Whilst the end-users transfer the rights to the VER to the VPA Implementer, a separate agreement is in place between the VPA Implementer and the CME transferring the rights to VERs to the CME.

Pre Announcement	Yes	No
Was your project previously announced?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Explain your statement on pre announcement The VPA was not previously announced to be going ahead without the revenues from carbon credits. On the contrary, income from carbon credits are essential to the successful implementation of the programme in order to make biogas digesters affordable to the target group.		

C.4. Greenhouse gas

[See Toolkit 1.2.d]

Greenhouse Gas	
Carbon dioxide	<input checked="" type="checkbox"/>
Methane	<input checked="" type="checkbox"/>
Nitrous oxide	<input type="checkbox"/>

C.5. Project Registration Type

[See Toolkit 1.2.f]

Project Registration Type	
Regular	<input checked="" type="checkbox"/>

Pre-feasibility assessment	Retroactive projects (T.2.5.1)	Preliminary evaluation (eg: Large Hydro or palm oil-related project) (T.2.5.2)	Rejected by UNFCCC (T2.5.3)
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If Retroactive, please indicate Start Date of project activity dd/mm/yyyy: not applicable

SECTION D. Unique project identification

D.1. GPS-coordinates of project location

[See Toolkit 1.6]

	Coordinates
Latitude	6 00 S
Longitude	35 00 E



Explain given coordinates

This VPA will disseminate biogas systems over the entire territory of Tanzania. The primary means to uniquely identify the location of activities (biogas digesters) under the VPA is by means of buyer information collected through Sales Agreements. This will include recording the address/location of the system, GPS coordinates, customer name, date of sale, date of commissioning, name of VPA implementer, biogas model and size.

The above coordinates include rounded latitude and longitude figures for the centroid or center point of a country expressed in degrees and minutes; it is based on the locations provided in the Geographic

Names Server (GNS), maintained by the National Geospatial-Intelligence Agency on behalf of the US Board on Geographic Names.⁴

D.2. Map

[See Toolkit 1.6]



Figure 1: Location of CAMARTEC and border of Tanzania

SECTION E. Outcome stakeholder consultation process

E.1. Assessment of stakeholder comments

⁴ Available from <https://www.cia.gov/library/publications/the-world-factbook/fields/2011.html>

[See Annex J]

Comments were solicited from stakeholders in accordance with the Gold Standard's procedures for the first VPA included in Tanzania under the ABC PoA (VPA-0002). Confirmation was received from the Gold Standard that the outcomes of this LSC can be used for this VPA due to the fact that the target population and technology applied is exactly the same. However, a new Stakeholder Feedback Round (SFR) is needed. Below we outline the outcomes of the 2012 LSC, as well as the SFR conducted in 2016.

A summary of the comments received during the stakeholder consultation is provided below. It was not necessary to make alternations to project design following feedback from stakeholders.

Stakeholder comment	Was comment taken into account (Yes/ No)?	Explanation (Why? How?)
It takes long to realise the carbon credits from the programme	No	This is as a result of the nature of the UNFCCC CDM modalities, which the project proponents are not in position to change.
Even with the subsidy the cost of constructing a biogas digester is still relatively high. The subsidy is still small.	No	The price of biogas digesters is not determined by the PoA/CME. The price is determined by the level of subsidy and market forces and the payback period for households is estimated at around three years.
The Programme does not specify how the private sector will be engaged or supported.	No	It was further clarified that TDBP will mainly work via the private sector and CSOs/NGOs working as Implementation Partners of TDBP to install the digesters on the ground. It is then up to these organisations to drive the number of digesters installed.
I would have preferred to have the office of the Uganda Carbon Bureau in Arusha or Nairobi as opposed to Kampala, Uganda.	No	Under the programme design, it was already planned to have a local representative in each country, which should help the concern. However under East African law a company registered in Uganda can act as a local company in Tanzania.
The farmers need access to loan facilities to further support the implementation of	No	Financing is one issue that the Africa Biogas Partnership Programme (ABPP) is already looking into, especially being

biogas systems.		aware that the remaining cost of the biogas digesters even with a subsidy is unaffordable to many people. TDBP will further investigate the possibility for micro-financing options for biogas digesters.	
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E.2. Stakeholder Feedback Round

Please describe report how the feedback round was organised, what the outcomes were and how you followed up on the feedback.

[See Toolkit 2.11]

A Stakeholder Feedback Round was organized from XX/XX/XXXX – XX/XX/XXX. Stakeholders were invited to review the LSC Report, PDDs and Passports for the PoA and this VPA. All stakeholders that were invited to the original LSC meeting were sent the invitation letter shown in the figure below (Figure 1). A screenshot of the email sent to stakeholders (Figure 2) is also provided.

Figure 1: Copy of the letter sent to stakeholders soliciting their feedback as part of the Stakeholder Feedback Round.

Figure 2: Screenshot of email sent to stakeholders soliciting their feedback

Feedback was received from [include details]

E. 3. Discussion on continuous input / grievance mechanism

A discussion was held regarding stakeholders ability to provide continuous input into TDBP. It was deemed suitable the stakeholders were provided with a telephone number and email addresses (for the TDBP programme and the Gold Standard Representative for the African region) to contact in case of any concerns about the project in the future. In addition to this, stakeholders were informed that comment book (Continuous Input Process Book) would be provided at each of the TDBP regional offices to allow stakeholders to provide feedback on the project activities under the programme during its lifetime. It was also emphasized that TDBP would be required to respond to each stakeholder comment.

	Method Chosen (include all known details e.g. location of book, phone, number, identity of mediator)	Justification
Continuous Input / Grievance Expression Process Book	<p>A Process Book will be made available at each of the TDBP regional offices.</p> <p>Location 1: Tanga</p> <p>Location 2: Arusha</p> <p>The book will be checked every two weeks.</p>	Outcome of stakeholder consultation (see above). It is important to provide access to a physical log book. Two books are considered sufficient since it is expected that most feedback will come via telephone.
Telephone access	<p>Stakeholders will be able to call to provide input on the project's performance at any time. The numbers available include:</p> <p>+255 789 555 722 at TDBP's Head office and</p> <p>+255 673 952917 at Tanga</p>	Outcome of stakeholder consultation (see above). The provided number includes a mobile phone number to enable users to either call or text their comments to ABPP. Mobile phone use is the primary means of communication nationwide, especially since landlines are expensive.
Internet/email access	<p>Stakeholders will be able to provide continuous input/feedback via the following email addresses:</p> <p>To contact the TDBP: tdbp@habari.co.tz</p>	Outcome of stakeholder consultation (see above). For users with access to the internet, direct contact with the ABPP through the programme's website is important.
Gold Standard	Stakeholders who want to send complaints or comments about the carbon finance	

	<p>mechanism of TDBP can contact Gold Standard in Switzerland through</p> <p>info@goldstandard.org</p> <p>and +41 (0) 22 788 7080</p>	
Nominated Independent Mediator (optional)	Not included	Stakeholders did not discuss this as being necessary. Given that all three other methods of providing feedback are provided, it was not deemed necessary to also include a Nominated Independent Mediator.

SECTION F. Outcome Sustainability assessment

F.1. 'Do no harm' Assessment

[See Toolkit 2.4.1 and Annex H]

Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low, medium, high)	Mitigation measures.
Human Rights			
1. Human rights abuses	<p>The project respects human rights, including dignity, cultural property and uniqueness of indigenous people. Participation is completely voluntary and the project respects personal freedom and liberty. The project is not complicit in Human Rights abuses. The project respects internationally proclaimed human rights.</p> <p>Host country commitment to UN conventions on Human Rights:</p> <p>International Covenant on Economic, Social</p>	Low	N/A

Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low, medium, high)	Mitigation measures.
	and Cultural Rights New York, 16 December 1966. United Republic of Tanzania Accession (a), on 11 June 1976.		
2. Involuntary resettlement	<p>The project does not involve and is not complicit in involuntary resettlement.</p> <p>The domestic biogas units to be installed under the TDBP will be small in size and are to be constructed within the confines of people's homesteads. The project will therefore not involve any resettlement.</p>	Low	N/A
3. Damage to cultural heritage	<p>The project does not involve and is not complicit in the alteration, damage or removal of any critical cultural heritage.</p> <p>Cultural heritage will not be altered by the projects, since the biogas units will be constructed within the household compounds on a voluntary basis and no damage to cultural or religious heritage is expected.</p>	Low	N/A
Labour Standards			
4. Freedom of association etc.	<p>The project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights.</p> <p>All employees working with TDBP implementation partners and private Biogas Construction Enterprises (BCEs) have freedom of association and are not banned from collective bargaining.</p> <p>Host country commitment to international conventions on labour standards and child Rights:</p> <p>Convention on the Rights of the Child, New York, 20 November 1989. The United Republic of Tanzania ratified the treaty on 10 June 1991. The United Republic of Tanzania is also a member of the</p>	Low	N/A

Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low, medium, high)	Mitigation measures.
	International Labour Organisation.		
5. Absence of compulsory labour	<p>The project does not involve and is not complicit in any form of forced or compulsory labour. TDBP and the VPA Implementing Partners will not be complicit in any form of forced labour. All employees offering services will do so on a voluntary basis and are free to quit at anytime.</p> <p>Host country commitment to international conventions on labour standards and child Rights:</p> <p>Convention on the Rights of the Child, New York, 20 November 1989. The United Republic of Tanzania ratified the treaty on 10 June 1991. The United Republic of Tanzania is also a member of the International Labour Organisation</p>	Low	N/A
6. Child labour	<p>The project does not employ and is not complicit in any form of child labour. TDBP will ensure that no child-labour is involved in the biogas programme implementation. Current Implementation Partners under TDBP do not employ children.</p> <p>Host country commitment to international conventions on labour standards and child Rights:</p> <p>Convention on the Rights of the Child, New York, 20 November 1989. The United Republic of Tanzania ratified the treaty on 10 June 1991. The United Republic of Tanzania is also a member of the International Labour Organisation</p>	Low	N/A
7. Discrimination	<p>The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis. Provided they meet the basic requirements, any biogas implementer can join the programme irrespective of their</p>	Low	N/A

Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low, medium, high)	Mitigation measures.
	<p>gender, race, religion or sexual orientation.</p> <p>Host country commitment to international conventions on labour standards and child Rights: Convention on the Rights of the Child, New York, 20 November 1989. The United Republic of Tanzania ratified the treaty on 10 June 1991. The United Republic of Tanzania is also a member of the International Labour Organisation.</p>		
8. Healthy work environment	<p>The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments.</p> <p>The TDBP will involve installation of small domestic biogas units. The biogas systems require relatively simple construction and tools, with no need for scaffolding, the risk of accidents is minimised.</p> <p>During training courses for masons and supervisors, safe construction of a biogas unit will be demonstrated.</p> <p>To ensure that a safe working environment is maintained –properly fitting covers will be designed for the mixing tank and the slurry tank and ensure they are covered at all times.</p> <p>The risk of exposure to unsafe environment during the operation of the biogas units is also minimal.</p>	Low	N/A
Environmental Protection			
9. Environment	<p>The project takes a precautionary approach in regard to environmental challenges and is not complicit in practices contrary to the precautionary principle.</p> <p>The project does not involve any invasive species, chemicals dangerous to the</p>	Low	N/A

Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low, medium, high)	Mitigation measures.
	<p>environment or hazardous waste.</p> <p>The biogas units will utilise animal/ human excreta and food wastes. The resulting slurry can be used as a fertiliser and has no negative impact on the environment but rather enhances it.</p>		
10. Degradation of natural habitats	<p>The project does not involve and is not complicit in significant conversion or degradation of critical natural habitats, including those that are (a) legally protected, (b) officially proposed for protection, (c) identified by authoritative sources for their high conservation value, or (d) recognized as protected by traditional local communities.</p> <p>In fact, the project will reduce deforestation and contribute to the protection of forestry, water and soil resources. The biogas will be a renewable and clean energy source.</p>	Low	N/A
Anti-corruption			
11. Corruption	<p>The project does not involve and is not complicit in corruption. As corruption is a widespread phenomena in many African countries it can occur as well in the United Republic of Tanzania. But the project structures are not sensitive to corruption due to the nature of the project set up –working with a number of not-for profit organisations as implementing partners and the relatively low amount of money involved per biogas unit constructed.</p>	Low	N/A

F.2. Sustainable Development matrix

[See Toolkit 2.4.2 and Annex I]

Insert table as in section D3 from your Stakeholder Consultation report (Sustainable Development matrix).

Indicator	Mitigation measure	Relevance to achieving MDG (referring to WHO)	Chosen parameter and explanation	Score
Environment				
Air Quality and quantity	N/A	The project will lead to the reduction in indoor air pollution caused by the combustion of fuelwood and charcoal, through their substitution with biogas. The health situation especially for women and children will therefore be improved significantly (MDG 5&7).	Parameter: Perceived improvement in health by the user (incidence of eye problems and respiratory illness). Explanation: Less indoor smoke will reduce incidence of respiratory health problems, especially in women and children who spend more time near the hearth.	+
Water quality and quantity	N/A	Whilst the operation of a biogas unit requires a certain amount of water, which will be fed into the digester together with cow dung (ratio 1:1), the project will contribute to the protection of water resources through reduced deforestation (MDG 7).	N/A: neutral score	0
Soil Condition	N/A	The substitution of fuel wood with biogas will indirectly contribute to a reduction in soil erosion by reducing deforestation. The slurry generated from biogas units can be used as high value fertiliser (MDG 7).	Parameter: Percentage of biogas users who use slurry as a fertilizer. Explanation: Application of slurry to soil increases the quality of soil.	+
Other pollutants	N/A	N/A	N/A: neutral score	0

Indicator	Mitigation measure	Relevance to achieving MDG (referring to WHO)	Chosen parameter and explanation	Score
Biodiversity	N/A	The project will indirectly contribute to enhancement of biodiversity and nature conservation through reduction of pressure on natural habitats in Tanzania resulting from deforestation by substitution of wood fuels with biogas (MDG 7) However, the impact on biodiversity is indirect and will therefore not be monitored	N/A: neutral score	0
Social development				
Quality of employment	N/A	The project will provide vocational training programs to employees, helping them to acquire new technical skills and knowledge which can help to reduce poverty. (MDG 1).	Parameter: number of masons attending training programmes Explanation: Those attending the trainings will acquire new technical skills and knowledge.	+
Livelihood of the poor	N/A	Households will have a lower annual expenditure due to a reduced need to purchase non-renewable biomass and fossil fuels used for cooking and artificial fertilizers. (MDG 1).	Parameter: Percentage of users reporting changes in expenditure on fuel for cooking Explanation: the biogas produced from the digesters is used as a source of cooking fuel and will reduce the need to purchase alternative fuels.	+

Indicator	Mitigation measure	Relevance to achieving MDG (referring to WHO)	Chosen parameter and explanation	Score
Access to affordable and clean energy services	N/A	With the construction of biogas units, an affordable and clean energy source will be available to farmers from a cost effective technology subsidised by carbon finance. Reduced dependency on non-renewable biomass and fossil fuels (MDG 1).	Parameter: Number of biogas units installed Explanation: the number of biogas units installed will indicate that the project has successfully promoted access to affordable and clean energy services.	+
Human and institutional capacity	N/A	Biogas raises awareness on clean energy and the harms of deforestation and environmental pollution (MDG 7). However, the project is not otherwise considered to have a significant impact on human and institutional capacity	N/A; neutral score	0
Economic and technological development				
Quantitative employment and income generation	N/A	The project will provide employment for local masons and supervisors with TDBP Implementing Partners and within supplier organizations. Installers will get paid per commissioned biogas unit, which enables them to gain permanent and independent salaries. The increasing demand for biogas in Tanzania creates job security for the masons. (MDG 1).	Parameter: Number of employees in the project Explanation: indicates income generation benefits of the project	+
Balance of payments and investment	N/A	Micro credit and upfront financing with assistance of local banks and saving credit co-operations is possible (MDG 1).	N/A: neutral score	0

Indicator	Mitigation measure	Relevance to achieving MDG (referring to WHO)	Chosen parameter and explanation	Score
Technology transfer and self-reliance	N/A	<p>The wide range of biogas units to be included under the domestic biogas PoA have all been adapted to Tanzania. The project therefore promotes technology transfer, which contributes to and enhances the local knowledge base.</p> <p>With sufficient training through TDBP Implementation Partners and BCEs, local masons are able to construct a biogas unit themselves and train more independent masons on construction and maintenance. (MDG 9).</p>	<p>Parameter: Number of masons attending training programmes.</p> <p>Explanation: the Programme will build vocational knowledge in the domestic biogas sector, which was previously absent.</p>	+
<p>Justification of choices, data source and provision of references</p> <p>(A justification paragraph and reference source is required for each indicator, regardless of score)</p>				
Air quality	<p>In 2004, indoor air pollution caused as a result of the combustion of solid and fossil fuels was responsible for an estimated 2 million deaths⁵. The installation of biodigesters allows the use of biogas as a fuel, thereby providing clean, renewable energy to households. The combustion of biogas will significantly reduce the presence of harmful indoor air pollution⁶, thereby benefitting the health of residents, especially women and children who spend the most time indoors.</p>			
Water quality and quantity	<p>There is no release of pollutants into any kind of water as part of the manufacturing and operation of biogas systems. While a small amount of water is required to be mixed with manure this is a relatively insignificant amount. The project will contribute to the protection of water resources through reduced deforestation.</p>			

⁵ WHO (2010) Health in the green economy: Co-benefits to health of climate change mitigation [online] available at: http://www.who.int/hia/hgebrief_henergy.pdf

⁶ WHO (2010) Health in the green economy: Co-benefits to health of climate change mitigation [online] available at: http://www.who.int/hia/hgebrief_henergy.pdf

Indicator	Mitigation measure	Relevance to achieving MDG (referring to WHO)	Chosen parameter and explanation	Score
Soil condition	<p>The biogas digesters will produce slurry as part of the anaerobic digestion of waste. This slurry has a considerably higher fertility than direct application of manure to the field⁷ and is provided free of charge to farmers as a bi-product of biogas production. In many cases across East Africa soils can become degraded due to continued harvests. The application of slurry to agricultural soils can therefore help to improve soil condition through increasing organic content.</p> <p>Alternatively, any farmers who have an excess of slurry, or who opt not to apply it to their soils, could sell their slurry to other farmers locally; thereby further helping to offset biogas digester installation costs.</p>			
Other pollutants	No other pollutants are anticipated from the project.			
Biodiversity	Reducing the pressure on forests for wood fuel production has a positive effect on the rate of deforestation and therefore the loss of biodiversity. However, the impact on biodiversity is indirect and has therefore been scored neutral.			
Quality of employment	The project will provide vocational training programs to employees, helping them to acquire new technical skills and knowledge. Training will ensure that the construction/installation of the biogas system is done by competent persons. Employees will receive a training certificate and records will be kept of all persons attending trainings.			
Livelihood of the poor	<p>Dependence on polluting and inefficient household fuels and appliances is both a cause and a result of poverty. The project will help to improve the livelihoods of users through reducing household energy costs in the long term, freeing up time for other activities through a reduced need to collect firewood and improving health by avoiding indoor air pollution.</p> <p>Households often do not have the resources to obtain cleaner, more efficient fuels and appliances. Reliance on simple household fuels and appliances holds back economic development, continuing a cycle of poverty and reliance on polluting, inefficient fuels. The project in the medium term, after covering the cost of installation, will result in significant fuel saving for households.</p>			

⁷ See for example: Islam et al. (2010) The effects of biogas slurry on the production and quality of maize fodder, *Turk J Agric For*, 34, pp 91 -99; Kurchania, A.K. and Panwar, N.L. (2011) Experimental investigation of an applicator of liquid slurry, from biogas production, for crop production, *Environmental Technology*, 32 (8), pp. 873 – 878.

Indicator	Mitigation measure	Relevance to achieving MDG (referring to WHO)	Chosen parameter and explanation	Score
Access to affordable and clean energy services				
Human and institutional capacity				
Quantitative employment and income generation				
Balance of payments and investment				
Technology transfer and technological self-reliance				

SECTION G. Sustainability Monitoring Plan

[See Toolkit 2.4.3 and Annex I]

Copy Table for each indicator

No	1
Indicator	Air quality
Mitigation measure	N/A
<i>Repeat for each parameter</i>	

Chosen parameter		Perceived improvement in health by the user (incidence of eye problems and respiratory illness)
Current situation of parameter		Current biogas users report an improvement in health since receiving a biogas digester. 71 % of respondents report a reduction in the occurrence of respiratory diseases. ⁸
Estimation of baseline situation of parameter		In the absence of the biogas programme, indoor air pollution would continue to have negative impacts on the health of householders, especially women and children who spend the most time indoors and near the domestic hearth. In the baseline scenario households would continue to use wood and fossil fuels for cooking, creating indoor smoke and associated indoor air pollution.
Future target for parameter		The project aims to have users experience an improvement in health through reduced smoke inhalation.
Way of monitoring	How	Users of the biogas digesters will be asked if they feel the incidence of eye problems and respiratory illness have a) increased, b) stayed the same or c) decreased as a result of getting a biogas digester.
	When	Annually
	By who	VPA Implementing team

No	02
Indicator	Soil condition
Mitigation measure	N/A
<i>Repeat for each parameter</i>	
Chosen parameter	Percentage of biogas users who use slurry as a fertilizer
Current situation of parameter	Prior to the biogas programme, no biogas digester slurry existed to use as fertilizer.
Estimation of baseline situation of parameter	As above.
Future target for parameter	Biogas digester slurry will be used as fertilizer on agricultural lands.

⁸ Tanzania Biogas User Survey 2014, Section 3.1.9.5 (page 46)

Way of monitoring	How	The occurrence of application of slurry to agricultural land will be monitored through sampling as part of the annual monitoring effort. Stakeholders will be asked how they use the slurry, if at all.
	When	Annually
	By who	VPA Implementing team

No	03	
Indicator	Quality of Employment	
Mitigation measure	N/A	
<i>Repeat for each parameter</i>		
Chosen parameter	Number of masons attending training programmes	
Current situation of parameter	All masons employed to date have received training on how to correctly install the biogas digesters. No biogas masons have been trained since the start date of the VPA (01/01/2017).	
Estimation of baseline situation of parameter	A historical lack of demand for biogas systems has meant that few masons have the knowledge required to adequately build, market and maintain a reliable system.	
Future target for parameter	All masons receive vocational training under the programme.	
Way of monitoring	How	All vocational training attendees will be issued with a certificate proving their attendance, and a record of their names, contact details and gender, will be kept as part of the CME's consolidated monitoring database. This will be updated as and when trainings are conducted.
	When	As and when trainings are conducted.
	By who	VPA Implementing team

No	04	
Indicator	Livelihood of the poor	
Mitigation measure	N/A	
<i>Repeat for each parameter</i>		
Chosen parameter	Percentage of users reporting changes in expenditure on fuel	

		for cooking.
Current situation of parameter		Currently, households use non-renewable biomass and fossil fuels to meet their energy needs. These require time and money for collection and create indoor smoke when burning. This causes respiratory health problems, and the black smoke requires that the household must often be cleaned. The installation of biogas systems will not only improve indoor air quality, but will also reduce cooking times and time spent on cleaning and collecting fuels (primarily benefiting women and children).
Estimation of baseline situation of parameter		As above
Future target for parameter		The livelihood of the poor is improved by a reduced expenditure on fuels for cooking.
Way of monitoring	How	Stakeholders will be asked: Has your expenditure of fuel for cooking a) increased, b) decrease or c) stayed the same since purchasing the biogas digester?
	When	Annually
	By who	VPA Implementing team

No		05
Indicator		Access to affordable and clean energy services
Mitigation measure		N/A
<i>Repeat for each parameter</i>		
Chosen parameter		Number of biogas units installed
Current situation of parameter		No biogas digesters have been installed under the VPA to date
Estimation of baseline situation of parameter		Prior to the programme, biogas digesters were prohibitively expensive and little or no farmers made use of this technology.
Future target for parameter		Starting 2017 1,992 new biogas digesters installed per year. From 2017 to 2022 total 11,952 biogas digesters installed.
Way of monitoring	How	The total number of biogas digesters will be determined via the electronic Project Database.

	When	Annually
	By who	VPA Implementing Team

No	06	
Indicator	Quantitative employment and income generation	
Mitigation measure	N/A	
<i>Repeat for each parameter</i>		
Chosen parameter	Number of employees in the project	
Current situation of parameter	No biogas masons have been employed since the start date of the VPA (01/01/2017).	
Estimation of baseline situation of parameter	Tanzania's unemployment rate has remained fairly stable at an average of 11.9% in from 2001 to 2011. ⁹ The country is highly dependent on the agricultural sector, which accounts for 85% of the country's exports and employs 80% of the workforce. GDP per capita (PPP) is estimated at only USD 1,600. ¹⁰	
Future target for parameter	New jobs created through the programme as implementation figures grow	
Way of monitoring	How	Records will be kept of all employees and jobs created as part of the programme. Hard copies of employment contracts will be kept by VPA Implementers as evidence. Will include part-time work.
	When	Updated continually as and when new jobs are created and employees taken on.
	By who	VPA Implementing team

No	07	
Indicator	Technology transfer and technological self-reliance	
Mitigation measure	N/A	
<i>Repeat for each parameter</i>		
Chosen parameter	Number of employees attending training programmes	

⁹ Available from <http://www.tradingeconomics.com/tanzania/unemployment-rate>

¹⁰ Available from <https://www.cia.gov/library/publications/the-world-factbook/geos/tz.html>

Current situation of parameter		As Parameter 03
Estimation of baseline situation of parameter		As Parameter 03
Future target for parameter		As Parameter 03
Way of monitoring	How	As Parameter 03
	When	As Parameter 03
	By who	As Parameter 03

Additional remarks monitoring

All monitoring scheduled to be conducted on an annual basis will be carried out following the sampling methods laid out in the Gold Standard methodology 'Technologies and Practices to Displace Decentralized Thermal Energy Production'. (Version 2.0)

SECTION H. Additionality and conservativeness

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This section is only applicable if the section on additionality and/or your choice of baseline does not follow Gold Standard guidance.

H.1. Additionality

[See Toolkit 2.3]

Not applicable – the demonstration of additionality follows Gold Standard guidance.

H.2. Conservativeness

[See Toolkit 2.2]

Not applicable – the demonstration of additionality follows Gold Standard guidance.

ANNEX 1 ODA declaration

[See Toolkit Annex D]

UPDATE DECLARATION BELOW