

## ANNEX R – PASSPORT TEMPLATE

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## SECTION A. Project Title

Title: GS5801 African Biogas Programme (ABC) – Kenya – VPA006

Date: 08/02/2018

Version no.: 1.4

## SECTION B. Project description

In many developing countries the dependency on firewood and charcoal as a source of energy is very high<sup>1</sup>, with around 3 billion people combusting solid fuels on open fires to meet their cooking and heating needs<sup>2</sup>. 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 use<sup>3</sup>. 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).

Kenya is the host country for VP006 of the *African Biogas Carbon Programme (ABC)* PoA. The project is developed as part of the African Biogas Partnership (ABPP) with support from Hivos and SNV. The project 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 (CO<sub>2</sub>) emissions, and also reduce methane (CH<sub>4</sub>) emissions by diverting manure that would otherwise decompose in open pits, emitting methane.

The Kenya Biogas Programme (hereafter referred to as 'KBP') is the project implementer, with the responsibility of coordinating, facilitating and monitoring sector functions and supporting the technical, financial and institutional architecture necessary for development of the domestic biogas sector in Kenya. The VPA is to be implemented based on private sector market oriented principles, but developing governmental support for a favourable regulatory and policy environment, as well as general buy-in promotion and extension

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

Estimated project (VPA) start date: 01/01/2014

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

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

<sup>3</sup> 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.



**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"/>	X

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

Kenya

**C.3. Project Type**

*Please tick where applicable:*

Project type	Yes	No
Does your project activity classify as a Renewable Energy project?	X	<input type="checkbox"/>
Does your project activity classify as an End-use Energy Efficiency Improvement project?	<input type="checkbox"/>	X
Does your project activity classify as waste handling and disposal project?	X	<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 01). The SSC-VPA's aggregated power capacity remains below 45 MW<sub>th</sub> throughout the crediting period. For activities falling under Type III, each VPA will achieve below 60,000 tCO<sub>2e</sub> in emission reductions annually.

*Host country or state:* VPA006 is located in Kenya. Kenya 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 project is a retroactive project activity. Hivos has always intended to include the digesters installed in Kenya from 01/01/2014 onwards in a new VPA. However, on 22/01/2015 the Gold Standard issued a rule update "Revision in the rules and requirement for Prior Consideration of Carbon Revenues for GS-VER projects". This rule update states that "In order to be eligible under Gold Standard, retroactive VPAs must submit the required documents to Gold Standard (time of first submission) within one year of its start date. Retroactive VPA documents submitted at a date later than one year from the project start date will not be eligible for Gold Standard certification. These requirements are applicable for VPAs that have a date of first submission on or after 1st June 2015". This had implications for the digesters installed in Kenya from 01/01/2014, since these could not have been included in VPA001 due to the capacity limit. A memo<sup>4</sup> was therefore prepared to apply for an exception to this rule through demonstrating prior consideration of carbon revenues. The Gold Standard approved the exception on 30 March 2017, and invited Hivos to open a new VPA under PoA GS2747 for the inclusion of biogas digesters installed from 2014 onwards.

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 (CH<sub>4</sub>) and carbon dioxide (CO<sub>2</sub>) gases. CH<sub>4</sub> and CO<sub>2</sub> 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 first CPA 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 ODA Declaration.

*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.

<sup>4</sup> Please see the file '22170131 Hivos Prior Consideration Memo Kenya' for the demonstration of prior consideration of carbon revenues for PoA GS2747 Kenya activities

*Carbon rights transfer from end users:* The end user of each biogas digester agree to transfer all rights to any carbon credits to the VPA Implementer as part of the Sales Agreement. The CME is the focal point with the Gold Standard Secretariat and receives the VERs generated. Whilst the end-users transfer the rights to the VERs 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"/>	X
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	X
Methane	X
Nitrous oxide	<input type="checkbox"/>

#### C.5. Project Registration Type

[See Toolkit 1.2.f]

Project Registration Type	
Regular	<input 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)
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	X	<input type="checkbox"/>	<input type="checkbox"/>
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If Retroactive, please indicate Start Date of project activity: **01/01/2014**

**SECTION D. Unique project identification**

**D.1. GPS-coordinates of project location**

[See Toolkit 1.6]

	Coordinates
<b>Latitude</b>	N 1° 0' 0"
<b>Longitude</b>	E 38° 0' 0"



*Explain given coordinates*

This VPA will disseminate biogas systems over the entire territory of Kenya. 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 includes the serial number, customer name, address, date of sale, name of VPA implementer, biogas model and size, and GPS coordinates of each installed digester.

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.<sup>5</sup>

**D.2. Map**

[See Toolkit 1.6]

<sup>5</sup> Central Intelligence Agency (no date) *The World Factbook*. Available from <https://www.cia.gov/library/publications/the-world-factbook/fields/2011.html>



Figure 1: Location of Kenya Biogas Programme (KBP) and border of Kenya

**SECTION E. Outcome stakeholder consultation process**

**E.1. Assessment of stakeholder comments**

The Kenya VPA006 is retroactively included in the African Biogas Carbon Programme (ABC) PoA, and is the second VPA of the PoA located in Kenya. The design and implementation of the Kenya VPA006 is exactly as per the design and implementation of VPA001 of the ABC PoA. Moreover, the geographical location of VPA001 and VPA006 are identical, as both cover the entire territory of Kenya. The reason for inclusion of VPA006 is simply that VPA001 has reached capacity; the project remains the same in all other aspects.

As part of the registration process of VPA001, a Local Stakeholder Consultation (LSC) was carried out on 19 October 2011 in Nairobi. There were 38 participants. A further LSC was carried out on 29 May 2015 as part of an effort to account for carbon reductions from soil carbon sequestration occurring as a result of bioslurry usage as fertilizer. There were 75 participants.

The table below provides a summary of the comments received during the LSC in 2011. It was not necessary to make alternations to the project design following feedback from stakeholders.

<b>Stakeholder comment</b>	<b>Was comment taken into account (Yes/ No)?</b>	<b>Explanation (Why? How?)</b>
Poor construction could lead to effluent seepage into the groundwater	Yes	It was agreed that for the KENDBIP <sup>6</sup> project this was a relatively low risk considering the quality control procedures required and training provided to all masons.
It was mentioned that the extra water required by the biogas system might put added pressure on household's water resources	Yes	Agreed this can be considered a minor risk as these systems would be installed in areas where there is a ready supply of water. The demands of water from each biogas system are also not extremely high, and a decreased rate of deforestation would help to improve watersheds.
The project will result in increased access to clean energy services however biogas systems even subsidised will not be affordable to the poorest.	No	The project already offers biogas digesters at a reduced cost and works with microfinance institutions to allow farmers the ability to access capital for the purchase of a digester.
Do you have a standard for quality control?	Yes	There are a number of different quality controls built into the programme. On the carbon credits side of the project it will be registered with Gold Standard. There are also a number of quality control checks to ensure quality of

<sup>6</sup> Please note that the Project is now implemented by KBP

			construction. When new digesters are included for other CPAs they will need to go through a quality check to ensure they will have a long lifetime.
	Where does carbon credit go?	No – only a clarification was required	The households own the carbon credits initially, but in providing a subsidy the ownership of the credit is transferred to KENDBIP. Currently, we are working on tools to explain the process of the carbon credit transfer to households, it is intended this will be done in a pictogram in English and local languages. <sup>7</sup> ACES-Biogas is working on ways to ensure that benefits will be passed on to households. <sup>8</sup>
	Why does the programme only cover small domestic installations would it not be more effective at a larger scale on community or industrial level?	No – only a clarification was needed.	The programme has been initially designed and funded for domestic installations and therefore we are limited in scope. In the future we would be keen to promote these larger scale digesters.

## 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]**

The Stakeholder Feedback Round has not yet taken place, and will be conducted at a later stage.

## E. 3. Discussion on continuous input / grievance mechanism

The below mechanisms are established for this VPA to ensure stakeholders are allowed to provide

<sup>7</sup> Please note that KBP is no longer working on this

<sup>8</sup> ACES-Biogas is not actively participating in this project anymore, Hivos has taken over this role. As such, Hivos will use carbon revenues to support affordability of the bio digesters and ensure sustainable after sales support.

feedback throughout the duration of the programme.

	<b>Method Chosen (include all known details e.g. location of book, phone, number, identity of mediator)</b>	<b>Justification</b>
Continuous Input / Grievance Expression Process Book	A Process Book in the form of an excel spreadsheet where all customer comments are logged is available and actively used. The includes details of the comments received, from who, who is responsible for following up and whether the issue is addressed or not.	Since it is expected that most feedback will come via telephone, and customers are located across Kenya it does not make sense to have a physical log book. An online excel sheet also allows KBP staff to better track issues that are still open and customer complaints.
Telephone access	Stakeholders will be able to call to provide input on the project's performance at any time. The numbers available to call include:  Landline: +254 020 218 0608 /218 0648  Mobile phone: 0719 635 516; 0723 903 957	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. Since almost everyone in Kenya has a mobile phone, or access to one, it is expected that the majority of feedback will come via telephone.
Internet/email access	Stakeholders will be able to provide continuous input/feedback via the following email address:  Email: <a href="mailto:info@kbp.co.ke">info@kbp.co.ke</a> or <a href="mailto:info@goldstandard.org">info@goldstandard.org</a> ; Website: <a href="http://kenyabiogas.com">http://kenyabiogas.com</a>	For users with access to the internet, direct contact with the ABPP through the programme's website is important.
Nominated Independent Mediator (optional)	Not included	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	Mitigation measure
<b>Human Rights</b>			
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><b>Host country commitment to UN conventions on Human Rights:</b></p> <p>International Covenant on Economic, Social and Cultural Rights New York, 16 December 1966 Kenya Accession (a), 1 May 1972 a International Covenant on Civil and Political Rights</p>	Low	N/A
2. Involuntary resettlement	<p>The project does not involve and is not complicit in involuntary resettlement.</p> <p>The domestic biogas units of KBP are small in size and are constructed within 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 project since the biogas units are constructed within the household compounds on a voluntary basis and no damage to cultural or religious heritage is expected.</p>	Low	N/A
<b>Labour Standards</b>			
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><b>Host country commitment to international conventions on labour standards and child Rights:</b></p> <p>Convention on the Rights of the Child, New York, 20 November 1989. Date of signature 26 Jan 1990. Kenya is member of the International Labour Organisation.</p>	Low	N/A
5. Absence of compulsory labour	<p>The project does not involve and is not complicit in any form of forced or compulsory labour. KBP and other VPA implementers are not 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><b>Host country commitment to international conventions on</b></p>	Low	N/A

Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it	Mitigation measure
	<p><b>labour standards and child Rights:</b></p> <p>Convention on the Rights of the Child, New York, 20 November 1989. Date of signature 26 Jan 1990.</p> <p>Kenya is member of the International Labour Organisation</p>		
6. Child labour	<p>The project does not employ and is not complicit in any form of child labour. KBP does not employ children.</p> <p><b>Host country commitment to international conventions on labour standards and child Rights:</b></p> <p>Convention on the Rights of the Child, New York, 20 November 1989. Date of signature 26 Jan 1990. Kenya is 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 gender, race, religion or sexual orientation.</p> <p><b>Host country commitment to international conventions on labour standards and child Rights:</b></p> <p>Convention on the Rights of the Child, New York, 20 November 1989. Date of signature 26 Jan 1990. Kenya is member of the International Labour Organisation.</p>	Low	N/A
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>VPA006 involves 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. During training courses for masons and supervisors, safe construction of a biogas units are demonstrated. In order to ensure that a safe working environment is maintained properly fitting covers for the mixing tank and the slurry tank are ensured 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
<b>Environmental Protection</b>			
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</p>	Low	N/A

Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it	Mitigation measure
	<p>dangerous to the environment or hazardous waste.</p> <p>The biogas units 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 reduces deforestation and contributes to the protection of forests, water and soil resources. The biogas will be a renewable and clean energy source.</p>	Low	N/A
<b>Anti-corruption</b>			
11. Corruption	<p>The project does not involve and is not complicit in corruption. To reduce the risk of corruption occurring, the programme has the following mechanisms in place:</p> <ul style="list-style-type: none"> <li>• A Code of Conduct for all biogas masons promoting fair competition practices is in place - all Masons/BCEs must sign and comply with the conditions stipulated in the Code of Conduct. This emphasizes integrity among personal and business conduct while working with the programme.</li> <li>• A BCE/Mason grading system is in place for all participating masons/BCES. This enforces blacklisting and removal from the programme all rogue masons/BCES based on several parameters including integrity.</li> <li>• An annually renewed contract/letter of signed by BCEs/Masons - based on an individual's manner of business conduct, Including integrity.</li> <li>• Client call centre, information sharing platforms and stakeholder sensitization meetings help to ensure transparency.</li> </ul> <p>In addition, the process of acquiring a digester is transparently documented and recorded as outlined in Section C of the PoA-DD. The Sales Agreements signed with customers document all payments made for the materials of the digester and time paid to the mason/BCE to construct the digester.</p>	Low	N/A
Additional relevant critical issues for my project type	Description of relevance to my project	Assessment of relevance to my project	Mitigation measure
No other additional critical issues were			

Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it	Mitigation measure
identified			

## 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	Chosen parameter and explanation	Preliminary score
Air quality	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
Biodiversity	N/A	The project will indirectly contribute to the enhancement of biodiversity and nature	N/A – neutral score	0

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
		<p>conservation through reduction of pressure on natural habitats in Kenya resulting from deforestation by substitution of wood fuels with biogas (MDG 7).</p> <p>However, the impact on biodiversity is indirect and will therefore not be monitored</p>		
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).	<p>Parameter: number of masons attending training programmes</p> <p>Explanation: Those attending the trainings will acquire new technical skills and knowledge.</p>	+
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 fertilisers (MDG 1).	<p>Parameter: Percentage of users reporting changes in expenditure on fuel for cooking</p> <p>Explanation: the biogas produced from the digesters is used as a source of cooking fuel and will reduce the need to purchase alternative fuels.</p>	+
Access to affordable and clean energy services	N/A	<p>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.</p> <p>Reduced dependency on non-renewable biomass and fossil fuels (MDG 1).</p>	<p>Parameter: Number of biogas units installed.</p> <p>Explanation: The number of biogas units installed will indicate that the project has successfully promoted access to affordable and clean energy services.</p>	+
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
Quantitative employment and income generation	N/A	Due to the high number of biogas units, the impact on local employment will be significant. The employment will contribute improved livelihoods (MDG 1).	<p>Parameter: Number of employees in the project</p> <p>Explanation: indicates income generation benefits of the project</p>	+

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
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
Technology transfer and technological self-reliance	N/A	<p>The wide range of biogas units to be included under the domestic biogas PoA have all been adapted to Kenya. The project therefore promotes technology transfer, which contributes to and enhances the local knowledge base.</p> <p>With sufficient training through 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 vocational trainings.</p> <p>Explanation: the Programme will build vocational knowledge in the domestic biogas sector, which was previously absent.</p>	+
<b>Justification choices, data source and provision of references</b>				
(A justification paragraph and reference source are required for each indicator, regardless of score)				
Air quality	In 2004, indoor air pollution caused as a result of the combustion of solid and fossil fuels was responsible for an estimated 2 million deaths <sup>9</sup> . 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 pollution <sup>10</sup> , thereby benefitting the health of residents, especially women and children who spend the most time indoors.			
Water quality and quantity	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			
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 field<sup>11</sup> 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</p>			

<sup>9</sup> 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](http://www.who.int/hia/hgebrief_henergy.pdf)

<sup>10</sup> 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](http://www.who.int/hia/hgebrief_henergy.pdf)

<sup>11</sup> 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	Chosen parameter and explanation	Preliminary score
	sell their slurry to other farmers locally; thereby further helping to offset biogas digester installation costs.			
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 <sup>12</sup> to masons, 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	Dependence on polluting and inefficient household fuels and appliances is both a cause and a result of poverty. In Kenya, the cost of charcoal has increased by 60% over the past decades, while the price of firewood has gone up from 9 to 61 KSh (Kenya Shillings) <sup>13</sup> . This is supported more recently, 2004 -2012, by the Kenya Bureau of Statistics Consumer Price Index (CPI) Monthly Reports <sup>14</sup> . The use of biogas as a renewable source of fuel will lower annual expenditure due to a reduced need to purchase fuelwood and charcoal.			
Access to affordable and clean energy services	Compared to the baseline scenario householder's access to safe and affordable energy will be considerably improved. Biogas fuel will be available at the simple turn of a knob, requiring no laborious and time-consuming collection of fuelwood and no costs beyond initial setup other than for maintenance. As long as the biogas digester is used and maintained properly, a secure supply of biogas will be provided.			
Human and institutional capacity	Education is not addressed by the project. Other impacts on capacity building like training on the job are mentioned on other indicators.			
Quantitative employment and income generation	The construction and maintenance of digesters will result in the creation of important employment opportunities in rural and urban areas. The overall development objective of the Programme is to promote and disseminate domestic biogas systems as a local, sustainable energy source through the development of a commercial, market-oriented sector that focuses its implementation through a multi-stakeholder sectoral development approach that involves locally trained contractors and masons who are supported by vocational training institutions. The program aims to create new jobs and a new business sector, therefore also creating opportunities for entrepreneurs to enter the market.			
Balance of payments and investment	Investment in the projects will be on the local level and are important in the context of specific rural economies. However, at the national level the project investments are not significant.			
Technology	The project facilitates the technology transfer of biogas technology from abroad through the training. All trained masons are freely permitted to provide services to any customers not included in the VPA. There			

<sup>12</sup> As specified in the PoA-DD, section A.4.2.2

<sup>13</sup> Page 95, Ministry of Energy, Study on Kenya's Energy Demand, Supply and Policy Strategy for Households, Small Scale Industries and Service Establishments, 2002

<sup>14</sup> The Kenya Bureau of Statistics has made publicly available CPI reports from January 2004 – July 2012, of the 28 reports that specifically mention the price of charcoal, 27 indicate the price is increasing significantly.

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
transfer and technological self-reliance	are no contractual obligations restricting masons to providing biogas construction and maintenance services only under this VPA. All masons operate on an entrepreneurial basis to allow them to operate in a free market. The open market approach offers opportunities for locals to train in biogas system installation and maintenance. Households can also be energy independent following the installation of a biogas system.			

## SECTION G. Sustainability Monitoring Plan

[See Toolkit 2.4.3 and Annex I]

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 as a result of using biogas.	
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 report a perceived 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.
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 if they apply slurry to their crops.
	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 working with the programme to date have received training on how to correctly install the biogas digesters.
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. 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 of 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		4160
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		
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
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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	KBP has employed 7 permanent staff members but will occasionally employ interns for seasonal work. There are also a large number of BCEs and masons that have worked with the implementing partner KBP.	
Estimation of baseline situation of parameter	Kenya's unemployment rate reached an all-time high to 40% in 2011, up from 12.7 % in 2006. This is higher than the average unemployment rate reported between 1999 and 2011, which averaged at 22.4%. <sup>15</sup>	
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 masons attending training programmes	
Current situation of parameter	The programme provides vocational training to biogas masons, who operate as their own entrepreneurs to gain new customers and construction contracts. Hence, their skills can be used outside of the programme.	

<sup>15</sup> Trading Economics (no date) Economic growth analysis, available from:  
<http://www.tradingeconomics.com/kenya/unemployment-rate>

		All masons working with the programme to date have received training on how to correctly install the biogas digesters.
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'.

## 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**



## ANNEX D - OFFICIAL DEVELOPMENT ASSISTANCE DECLARATION

Date: **21 December 2017**

The Gold Standard Foundation

79 Avenue Louis Casai

Geneva Cointrin, CH-1216

Switzerland

**RE: Declaration of Non-Use of Official Development Assistance (ODA) by Project Owner of GS5801 African Biogas Carbon Programme (ABC) – Kenya – VPA006 (“Project”)**

**Humanist Institute for Development Co-operation (HIVOS)**

As Project Owner of the above-referenced Project, and acting on behalf of all Project Participants, I now make the following representations:

### ***Coordinating/Managing Entity***

I hereby declare that I am duly and fully authorized by the Project Owner of the above-referenced project to act on behalf of all Project Participants and make the following representations:

#### **I. The Gold Standard Documentation**

I am familiar with the provisions of The Gold Standard Documentation relevant to ODA. I understand that the above-referenced Project is not eligible for Gold Standard registration if the Project receives or benefits from ODA with the condition that some, or all, of the carbon credits [CERs, ERUs, or VERs] coming out of the Project are transferred to the ODA donor country. I hereby expressly declare that no financing provided in connection with the above-referenced Project has come from or will come from ODA that has been or will be provided under the condition, whether express or implied, that any or all of the carbon credits issued as a result of the Project's operation will be transferred directly or indirectly to the country of origin of the ODA.

In the event the Project is a Programmes of Activities where the CME is also implementing one or more Component Project Activities (CPAs) or Voluntary Project Activities (VPAs), I further acknowledge and understand that this Declaration is applicable to all of the CPAs/VPAs where the CME and the CPA/VPA implementing entity is the same.

#### **II. Duty to Notify Upon Discovery**

If I learn or if I am given any reason to believe at any stage of project design or implementation that ODA has been used to support the development or implementation of the Project covered by this Declaration, or that an entity providing ODA to the host country may at some point in the future benefit directly or indirectly from the carbon credits generated from the Project as a condition of





