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Öko-Institut e.V.
Institut für angewandte Ökologie
Institute for Applied Ecology

Application of the Oeko-Institut/WWF-US/ EDF methodology for assessing the quality of carbon credits

This document presents results from the application of version 3.0 of a methodology, developed by Oeko-Institut, World Wildlife Fund (WWF-US) and Environmental Defense Fund (EDF), for assessing the quality of carbon credits. The methodology is applied by Oeko-Institut with support by Carbon Limits, Greenhouse Gas Management Institute (GHGMI), INFRAS, Stockholm Environment Institute, and individual carbon market experts. This document evaluates one specific criterion or sub-criterion with respect to a specific carbon crediting program, project type, quantification methodology and/or host country, as specified in the below table. Please note that the CCQI website Site terms and Privacy Policy apply with respect to any use of the information provided in this document. Further information on the project and the methodology can be found here: www.carboncreditquality.org

Criterion:	6.2 Sustainable development impacts of the project type or project
Project type:	Household biodigesters
Date of final assessment:	31 January 2023
Score:	5

Contact
info@oeko.de
www.oeko.de

Head Office Freiburg
P. O. Box 17 71
79017 Freiburg

Street address
Merzhauser Straße 173
79100 Freiburg
Phone +49 761 45295-0

Office Berlin
Borkumstraße 2
13189 Berlin
Phone +49 30 405085-0

Office Darmstadt
Rheinstraße 95
64295 Darmstadt
Phone +49 6151 8191-0

Assessment

Relevant scoring methodology provisions

The methodology assesses the extent to which a specific project or project type contributes to or hinders the achievement of each of the 17 Sustainable Development Goals (SDGs), with the exception of Goal 13 on climate action which is the primary goal of the climate mitigation projects. To assess the impacts of a project type or individual project on each SDG, the methodology draws on a seven-point ordinal scale for each SDG (see further details in the methodology). The following table illustrates the scale from -3 to +3 points to assess the impact or influence of a project type or individual project on each individual SDG goal:

Impact of the project on the SDG goal	Points
Indivisible: The successful implementation of the project automatically delivers progress on this SDG goal.	+3
Reinforcing: The successful implementation of the project directly makes it easier to make progress on this SDG goal.	+2
Enabling: The successful implementation of the project indirectly creates conditions that enable progress on this SDG goal.	+1
Consistent: There is no significant link between the project and this SDG goal.	±0
Constraining: The successful implementation of the project constrains the options for how to deliver on this SDG goal.	−1
Counteracting: The successful implementation of the project makes it more difficult to make progress on this SDG goal.	−2
Cancelling: The successful implementation of the project automatically leads to a negative impact on this SDG goal.	−3

As an additional step of the evaluation, it is assessed whether the project is implemented in Least Developed Countries or Small Island Developing States, which are recognized to face special circumstances that require additional support. Projects implemented in these countries receive an upgrade of one score point (e.g. from 3 to 4) in the overall evaluation of criterion 6.2. Note that the overall score cannot exceed 5.

Information sources considered

1 Meeks et al. 2019 – Waste not: can household biogas deliver sustainable development? Online available at: https://link.springer.com/article/10.1007/s10640-018-0224-1

2 Clemens et al. 2019 – Africa Biogas Partnership Program: A Review of Clean Cooking Implementation through Market Development in East Africa. Online available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6474691/

3 World Bank Group & ESMAP 2019 – The power of dung – Lessons learned from on-farm biodigester programs in Africa. Online available at: https://openknowledge.worldbank.org/bitstream/handle/10986/31716/The-Power-of-Dung-Lessons-Learned-from-On-Farm-Biodigester-Programs-in-Africa.pdf?sequence=5&isAllowed=y

4 SDG Climate Action Nexus Tool (SCAN-tool)

5 Lewis et al. 2016 - Biogas Stoves Reduce Firewood Use, Household Air Pollution, and Hospital Visits in Odisha, India. Online available at: https://pubs.acs.org/doi/10.1021/acs.est.6b02466

6 World Bank Group et al. 2014 – Clean and improved cooking in sub-saharan Africa. Online available at: https://documents1.worldbank.org/curated/en/879201468188354386/pdf/98667-WP-P146621-PUBLIC-Box393179B.pdf

7 WHO 2022 – Factsheet household air pollution and health. Online available at: https://www.who.int/en/news-room/fact-sheets/detail/household-air-pollution-and-health

8 CCAC 2022 - Biogas, a Climate and Clean Air Solution with Many Benefits. Online available at: https://www.ccacoalition.org/en/news/biogas-climate-and-clean-air-solution-many-benefits

9 Review of descriptions of different individual carbon credit projects

Assessment

The criterion is here assessed at the level of the project type, noting that the actual impacts may differ substantially between individual projects. The assessment thus aims to provide a picture of the typical impacts of the relevant project type. The project type is characterized as follows:

“Generation of biogas by anaerobic digestion of livestock manure, and possibly other household waste such as kitchen waste, through household size biodigesters (e.g., with a capacity of 2 m^3). The biogas is used by households for cooking. The project type may include a compost unit that utilizes the fermented sludge from the biodigester to produce organic fertilizer. The project type reduces emissions by (i) avoiding methane emissions from the uncontrolled decomposition of livestock manure and (ii) by reducing the use of firewood or fossil fuels for cooking activities. Projects are located in rural areas in developing countries.”

The assessment results are summarized in the below table.

SDG	Points	Justification
Goal 1: No Poverty	2	Savings are generated from using biogas and organic fertilizer and by buying less fossil fuels or fuelwood for cooking and synthetic fertilizers. Time saved from collecting less fuelwood could be spent on other (business) activities to generate income (targets 1.1 and 1.2).
Goal 2: Zero Hunger	2	Otherwise wasted manure is transformed into organic fertilizer enhancing soil quality and thus agricultural productivity (target 2.3), and fostering sustainable agriculture (target 2.4).
Goal 3: Good Health and Well-being	3	Household air pollution significantly reduced compared to fuelwood or kerosene cookstoves – likely to WHO recommended levels (target 3.9). Reduction in fuelwood demand reduces risk of musculoskeletal injuries from collecting fuelwood (target 3.4).
Goal 4: Quality Education	0	No interaction.
Goal 5: Gender Equality	2	Using biogas instead of fuelwood for cooking reduces the time spent by (mostly) women on collecting fuelwood and cooking which they can spend on other activities. Mainly women benefit from reduced health risks during cooking (targets 5.1 and 5.5).
Goal 6: Clean Water and Sanitation	0	No interaction.
Goal 7: Affordable and Clean Energy	3	Biodigesters contribute to a better energy security of households that depend on traditional energy carriers (target 7.1). Using biogas made from manure increases the share of renewable energy (target 7.2).
Goal 8: Decent Work and Economic Growth	3	Jobs are typically created along the biodigester value chain (targets 8.3 and 8.5). By using otherwise wasted manure for biogas and the derived fermented sludge as fertilizer, the project increases resource efficiency (target 8.4).
Goal 9: Industry, Innovation and Infrastructure	0	No interaction.
Goal 10: Reduced Inequality	1	Household biodigester can improve economic opportunities by enabling other incoming opportunities and generating income, especially within communities in low income, resource-dependent, and rural region (target 10.1).
Goal 11: Sustainable Cities and Communities	2	Biogas from the household biodigester improves energy security and reliability of the energy access compared to collecting fuelwood or buying fossil fuels for cooking (target 11.1). The project further improves the waste stream by making use of manure and fermented sludge (target 11.6).
Goal 12: Responsible Consumption and Production	3	The use of otherwise wasted manure and kitchen wastes for the biodigester has a positive impact on this SDG (targets 12.2, 12.3, 12.5). Using organic fertilizer reduces the negative impact of synthetic fertilizers replaced (target 12.4).
Goal 14: Life Below Water	0	No interaction.
Goal 15: Life on Land	2	If using biogas replaces the use of fuelwood, pressure on forest and land degradation is reduced (targets 15.2, 15.3 and 15.5).
Goal 16: Peace and Justice Strong Institutions	0	No interaction.

Goal 17: Partnerships to achieve the Goal	0	No interaction.
Total points achieved: 23		

The project type receives 23 points in the SDG impact evaluation. Furthermore, none of the goals is assessed with a score of -3. Using the scoring approach in the methodology, this results in a score of 5. As this is the maximum score, it also applies to Least Developed Country or Small Island Developing States.