Sustainable Development Verified Impact Standard

KENYA JIKO KISASA IMPROVED COOKSTOVE PROGRAM I

Document Prepared by Guangzhou Iceberg Environmental Consulting Services Co., Ltd.

Project Title	Kenya Jiko Kisasa Improved Cookstove Program I
Version	08
Date of Issue	06/01/2026
Project Location	The Republic of Kenya
Project Proponent(s)	Guangzhou Iceberg Environmental Consulting Services Co., Ltd. Address: No.106 Fengze East Road, Nansha District, Guangzhou, China Telephone: +8613560420840 Email: baoji@icebergchina.com ; hanjin@icebergchina.com
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Project Lifetime	21/06/2022 –20/06/2032; 10-year lifetime
History of SD VISta Status	No previous attempts at SD VISta certification made to date
Other Certification Programs	Verified Carbon Standard, Project ID: 3197
Expected Future Assessment Schedule	Future verification is expected in 2026

CONTENTS

1 SUMMARY OF SDG CONTRIBUTIONS

Table 1: Summary of Project SDG Contributions

Row number	Estimated Project Contribution by the End of Project Lifetime	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Section Reference	Claim, Asset or Label
1)	Improved cookstove is a basic service necessary to lead a healthy and productive life, including saving time and money for wood fuel at the household level. The cost on buying firewood will be reduced after the implementation of the project. The average monthly savings is 6 USD/month for ex-ante estimation.	1.4	Project-specific indicator: Average monthly savings due to reduction in expenditure on purchase fuel after introduction of project ICS	Implement activities to increase	3.2, #2	Claim
2)	By using ICS, it reduces people's exposure to high PM2.5 and high CO due to higher efficiency of combustion leading to faster cooking and more complete combustion. It also reduce the burn risk, significant to children and toddlers due to enclosure of the fire in the combustion chamber. A key anticipated outcome is a measurable improvement in perceived indoor air quality among beneficiary households. The percentage of households that reporting indoor air quality improved	3.9	Project-specific indicator: Percentage of households reporting indoor air quality improved since they received the project ICSs.	Implemented activities to increase	3.2, #3	Claim

	since received the project ICSs is 100% for ex-ante estimation.					
3)	The project provides technical and vocational training to employees involved in ICS production and distribution (e.g., manufacturing, quality control, logistics). The annual number of employees trained is 20 for ex-ante estimation.	4.4	Project-specific indicator: Number of employees provided skill development training	Implement activities to increase	3.2, #5	Claim
4)	The project reduces women and girls' drudgery through reducing their time spent on collecting firewood and cooking. The average time saving on cooking and collecting firewood by female in project scenario is 3 hour/day for ex-ante estimation.	5.4	Project-specific indicator: Average time saving on cooking and fuel collection in the project scenario by female per household per day	Implemented activities to increase	3.2, #4	Claim
5)	The project protects an important water related ecosystem-forest because the ICS reduces the consumption of firewood, which is expected to reduce 108,435 tons non-renewable woody biomass from forest annually due to firewood collection in the area of Sagana River and Athi River. It was estimated based on backward derivation of emission reductions.	6.6	Project-specific indicator: Total non-renewable woody biomass fuel saved	Increase	4.2, #2	Claim
6)	The ICS distributed to Household is a clean cooking technology. The project is expected replace traditional baseline cookstoves with 100,000 ICSs in total.	7.1	Project-specific indicator: Number of households receiving project ICS and still in use	Implement activities to increase	3.2, #1	Claim

7)	The ICS manufacturer which produces ICS is a local enterprise. It hires more workers to produce ICSs for the project. During the project crediting period, the project proponent is in charge of maintenance and monitoring plan, which also needs to hire local people, including persons with disabilities and minority. It is estimated that the project implementation will employ 20 local people.	8.5	Project-specific indicator: Number of employees hired for the project	Implement activities to increase	3.2, #6	Claim
8)	The local factories which produce ICS for the project are small-scale industries[1], which expands production capacity to satisfy the needs. Thus, the upstream and downstream supply chain benefits from the project. The production capacity of ICS manufacturer has increased from 10200 devices per month to 16800 per month due to the implementation of the project. During the project PP will training 20 employees/year in production and business skills after the distribution.	9.3	Project-specific indicator: Production capacity increased for the project	Implement activities to increase	3.2, #7	Claim
9)	The average annual GHG emission reduction from the project is expected to be 222,137 tCO_2e due to less	13.0	Tonnes of greenhouse gas emissions avoided or removed	Increase	VCS project description(Version 6.0, dated 04/10/2023)	SD VISta-labeled VCU

[1] https://www.knbs.or.ke/wp-content/uploads/2023/09/2016-Micro-Small-And-Medium-Enterprises-Survey-Highlights-Of-Basic-Report.pdf , Page 3, Kenya's official definition: Small enterprises - 10 to 49 employees.

	firewood combustion for cooking in the households.					
10)	The project helps local people consume less firewood as the ICS has higher thermal efficiency and it results in reduction of 108,435 tons non-renewable woody biomass from forest. It was estimated based on backward derivation of emission reductions.	15.1	Project-specific indicator: Total non-renewable woody biomass fuel saved	Implemented activities to increase	4.2, #2	Claim

2 PROJECT DESIGN

2.1 Project Objectives, Context and Long-term Viability

2.1.1 Summary of Project Sustainable Development Objective(s)

Before the implementation of the project, most of the local people in the project location use non-renewable biomass for cooking with open fire or three-stone fire. The project distributes fuel-efficient ICS to replace the baseline cookstoves in households. The project proponent will distribute 100,000 ICSs, and the ICSs are produced in local factories. The project enables and enhances households to achieve several sustainable development objectives:

- Economic impact:

The project increases the proportion of population with primary reliance on clean fuels and technology in project area. The project is expected replace traditional baseline cookstoves with 50,000 ICSs in the first year. (SDG 7.1).

The factory which produces ICS is a local enterprise. It hires more workers to produce ICSs for the project. During the project crediting period, the project proponent and its local partners are in charge of maintenance and monitoring plan, which also needs to hire local people, including persons with disabilities and minority. It is estimated that the project implementation will employ 20 local people. (SDG 8.5). The local factories are small-scale industries. They expand production capacity to satisfy the needs of the project. Thus, the upstream and downstream supply chain benefits from the project. The production capacity of ICS manufacturer is expected increase from 10200 devices per month to 16800 per month due to the implementation of the project. (SDG 9.3).

- Social impact:

Improved cookstove is a basic service necessary to lead a healthy and productive life, including saving time and money for wood fuel at the household level. Thus, the implementation of the project results in reduction in expenditure on purchase fuel after introduction of project ICS. (SDG 1.4).

Most of non-renewable biomass local people used for cooking is firewood, which generates high PM2.5 and high CO biomass smoke when inefficiently burnt. Percentage of households reporting indoor air quality improved since they received the project ICSs will be monitored. (SDG 3.9)

The implementation of project needs plenty of local people to participate in production, distribution or use steps. They get relevant skills and sustainable development and global citizenship education through training by project proponent. (SDG 4.4).

The project reduces women and children's drudgery through the time savings in cutting, collecting, and carrying firewood from trees far away from households as well as cooking over toxic smoky open fires. These tasks, if being undertaken without relief, are a major cause of gender inequality. (SDG 5.4)..

- Environmental impact:

The project protects an important water related ecosystem-forest through reducing deforestation by firewood collecting. (SDG 6.6).

The average annual GHG emission reduction from the project is expected to be 222,137 tCO_2e due to less firewood combustion for cooking in the households. (SDG 13.0).

The project helps local people consume less firewood as the ICS has higher thermal efficiency and it results in a reduction deforestation compared to the baseline scenario. (SDG 15.1).

2.1.2 Description of the Project Activity

The project involves distribution of fuel-efficient portable ICSs in Kenya. The ICSs disseminated through this project replaces the old low efficient baseline cookstoves. The ICS continues to consume non-renewable biomass for cooking, but the ICS consumes less wood fuel to meet thermal needs as it has higher thermal efficiency and it results in a reduction of GHG emissions compared to the baseline scenario. The ICSs are produced by local factories.

Technology

The type of ICS distributed in the project is Jiko Kisasa improved cookstove, the thermal efficiency is 27.2%. The cooking system is made of a combustion chamber, a pot rest and an air inlet window. The stove has no bottom utilizing the ground surface where it is placed as a bottom. The stove weighed approximately 8251 grams.

Table 2: Technical Specification of Jiko Kisasa Improved Cookstove

No.	Parameter	Value
1	High power thermal efficiency	27.2%
2	Life span	7 years
3	Dimensions	Height:13cm (+/-0.5cm) Diameter :27cm (+/-0.5cm)
4	Weight	8,251gm
5	Material	Combustion Chamber and Stove Top Ceramic made from locally available clay

Figure 1: Photo of Jiko Kisasa ICS

The lifetime of Jiko Kisasa improved cookstove is about 7 years according to manufacturer specifications. In the sixth year after ICSs distribution, the project proponent will provide a new ICS to Households without cost, so that households will have access to them for the full crediting period.

Through this project, Guangzhou Iceberg Environmental Consulting Services Co., Ltd. (hereinafter referred to as "Iceberg") will distribute approximately 100,000 ICSs free of charge to households in project area. The Iceberg also dedicates to enhance the community's awareness of health, well-being, climate change and sustainable development. Local employees are trained on production skills, sampling and conducting survey of the ICS users.

Before the implementation of the project, local people mostly use traditional solid-fuel cooking solutions such as open fire or three-stone fires. They spend plenty of time to collect firewood every day due to low combustion efficient. The ICSs burn wood more efficiently thereby improve thermal transfer to pots, hence saving firewood. The project reduces the GHG emission by less firewood combustion, which also reduce the rapidly progressing deforestation in project area[2].

The scenario existing prior to the implementation is widely used traditional solid-fuel cooking solutions such as open fire or three-stone fires. Due to low income, people would have continued to use them to meet thermal energy needs without project activity.

2.1.3 Implementation Schedule

Date	Milestone(s) in the Project's Development and Implementation
16/05/2022	Stakeholder meeting in Kiambu County

[2] https://www.globalforestwatch.org/dashboards/country/KEN/

19/05/2022	Stakeholder meeting in Muranga County
25/05/2022 to 06/06/2022	Baseline survey on key SDG indicators like health, gender equality, and energy use.
21/06/2022	Start distributing ICS
03/05/2023 to 06/06/2023	Fuel consumption survey
01/09/2023 to 14/11/2023	Monitoring survey on project's ongoing SDG impacts, including improved health, reduced women's labor, and fuel savings.
27/02/2024	Registered in VCS registry
21/06/2022 to 20/06/2024	First monitoring period, under VCS verification
18/10/2024 to 17/11/2024	Public comment period of SD Vista
16/03/2023	Complete the distribution of the existing 26,130 project ICSs.

2.1.4 Project Proponent

Organization Name	Guangzhou Iceberg Environmental Consulting Services Co., Ltd.
Role in the Project	Project proponent
Contact Person	Ji BAO
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2.1.5 Other Entities Involved in the Project

No other entities involved.

2.1.6 Project Type

The project is categorised under type/category as below:

a) Sectoral scope: 03 - Energy demand

b) Type: II – Energy efficiency improvement projects

The project is not a grouped project.

2.1.7 Project Location

The project location is the geographic boundary of the Republic of Kenya.

Table 3: Geographical coordinates of Kenya

Orientation	Latitude	Longitude
Eastmost	3°48′58″ N	41°53′59″ E
Westmost	1°03′35″ S	33°55′46″ E
Southmost	4°40′33″S	39°19′32″ E
Northmost	4°15′41″ N	35°23′57″ E

Figure 1: Map of Kenya

2.1.8 Baseline Scenario

Kenya is a Located in eastern Africa, the equator crosses the central part, and the Great Rift Valley runs north and south. The whole territory is located in the tropical monsoon zone, but influenced by its higher terrain, it has a savanna climate with large seasonal differences in precipitation.

Over the past few decades, Kenya's macroeconomic has steadily posted strong growth mostly from road, rail, air and water transport infrastructure projects. However, its key development challenges still include poverty, inequality, transparency and accountability, climate change, continued weak private sector investment and the vulnerability of the economy to internal and external shocks. Kenya ranks poorly on the Fragile States Index at number 33 out of 179 countries in 2021, which placed in the high warning category[3].

[3] https://fragilestatesindex.org/country-data/

Kenya is famed for its scenic landscapes and vast wildlife preserves, including lions, elephants, cheetahs, rhinoceroses, and hippopotamuses. Kenya's western provinces, marked by lakes and rivers, are forested, while a small portion of the north is desert and semidesert. The country's diverse wildlife and panoramic geography draw large numbers of European and North American visitors, and tourism is the second-largest source of foreign exchange revenue following agriculture[4]. Agriculture is the largest sector: tea and coffee are traditional cash crops, while fresh flowers are a fast-growing export.

A significant population of other wild animals, reptiles, and birds can be found in the national parks and game reserves in the country. The annual animal migration occurs between June and September, with millions of animals taking part, attracting valuable foreign tourism. Two million wildebeest migrate a distance of 2,900 kilometres from the Serengeti in neighbouring Tanzania to the Masai Mara[5] in Kenya, in a constant clockwise fashion, searching for food and water supplies. This Serengeti Migration of the wildebeest is listed among the Seven Natural Wonders of Africa[6].

Kenya is very vulnerable to climate change with current projections suggesting that its temperature will rise up to 2.5ºC between 2000 and 2050, while rainfall will become more intense and less predictable. Even the slightest increase in frequency of droughts will present major challenges for food security and water availability, especially in Kenya's Arid and Semi-Arid Lands[7].

Over 90% of the rural population and around 75% of all Kenyan households still cook with wood or charcoal[8]. From 2002 to 2023, Kenya lost 52.5 kha of humid primary forest, making up 14% of its total tree cover loss in the same time period[9]. The project proponent has conducted a baseline survey from 25/05/2022 to 06/06/2022 among 120 households from 6 villages, which shows that 96.67% of surveyed households used three-stone fire and 3.33% used open fire before the project implemented. All of the households used firewood for cooking. The baseline scenario is the continued use of non-renewable wood fuel (firewood) by the target population to meet similar thermal energy needs as provided by project cookstoves in absence of project activity.

2.1.9 Causal Chain(s)

See appendix A for the Causal Chain image.

[4] de Blij, Harm. The World Today: Concepts and Regions in Geography 4th edition. Wiley Publishing: Hoboken, NJ

[5] Bashir, Hanif. "Masai Mara Safari - The Migration | Tour Packages".

[6] Pflanz, Mike (13 June 2010). "New road threatens Africa's 'wonder of the world' wildebeest migration". Daily Telegraph. ISSN 0307-1235.

[7] https://reliefweb.int/report/kenya/climate-change-profile-kenya

[8] https://ambitiontoaction.net/wp-content/uploads/2021/07/A2A_Kenya_CleanCookingStudy_July2021.pdf#:~:text=Even%20though%20Kenya%20has%20made%20significant%20progress%20over,petroleum%20gas%20%28LPG%29%20as%20their%20primary%20cooking%20fuel.

[9] https://www.globalforestwatch.org/dashboards/country/KEN/

2.1.10 Threats to the Project

Natural-induced threats

1 Threat: More and more difficult to collect firewood for stove due to deforestation and degradation

Solution: Due to low income of end-users, they tend to use free firewood for stove instead of other fuel. The project ICSs distributed to them have reduced the consumption of the firewood. The project directly reduces deforestation by decreasing the demand for woody biomass through the distribution of improved cookstoves (ICS) with higher thermal efficiency (27.2%). By replacing traditional inefficient three-stone fires or open fires, the ICS significantly lowers firewood consumption per household. This reduction in demand alleviates pressure on local forests.

2 Threat: Natural disasters such as droughts, floods, or extreme weather events in Kenya may force households (HHs) to temporarily or permanently relocate. This could disrupt ICS usage, lead to loss or damage of stoves, and reduce the project's long-term benefits.

Solution: Prioritize replacement of lost/damaged ICSs for affected households through collaboration with local authorities and disaster response agencies.

Human-induced threats

1 Threat: The households may not want to accept the ICS

Solution: Iceberg and its local partners do research on the reason why some local households do not want to use the ICSs if it happens. First of all, the end-user households should be chosen carefully to avoid this problem. Only the poor households who do not have similar cookstoves are chosen to receive our project ICS without cost. Through the training, they can easily understand the benefits of the ICS, such as the reduction of air pollution and cost on wood fuel. The households accepting the ICS share their experiences in the training to encourage higher usage rate. Iceberg and its local partners continuously improve the training as well as other measures to increase the acceptance of the ICS.

2 Threat: ICS damage or malfunction reduces long-term usage

Solution: The manufacturer provides 1-year warranty and free repair services. The project proponent plans to distribute new ICSs to replace the old ones from the sixth year of the crediting period. Since the lifetime of the ICSs is seven years, they can be still used for 2-3 years after the end of the crediting period.

3 Threat: Unsustainable forest harvesting persists despite reduced demand.

Solution: During the distribution of ICS, reinforce end-users' awareness of fuel conservation through explanation to emphasize the correlation of “reduced logging = forest protection = long-term benefits”.

4 Threat: Inequitable distribution of ICSs, marginalizing remote communities.

Solution: Prioritize underserved areas in distribution plans. Partner with local partners to ensure inclusive outreach and transparent beneficiary selection.

5 Threat: Cultural resistance to abandoning traditional cooking methods.

Solution: Tailor training sessions to address cultural preferences, involve women in demonstrations, and highlight alignment with local values (e.g., time savings for childcare).

6 Threat: Dependency on carbon credit income; market failure risks long-term sustainability.

Solution: Build local capacity for stove production and maintenance to create self-sustaining markets.

2.1.11 Benefit Permanence

The project will distribute approximately 100,000 to households, which are produced in local factories. Hence the implementation of the project needs plenty of local people to participate in production, distribution or use steps, which results in more job opportunity. It trains skilled workers for Kenya industry, which benefits both themselves and the country even after the project activities have ceased. The project will have long-term positive influences on the health of end-users, especially the women and girls who mainly undertake the cooking in the households through the improvement of air condition. The time saved for education from cooking and firewood collection have permanent positive influences on the children, especially the girls who are mainly in charge of these two tasks. The forest saved by the project through the reduction of non-renewable biomass consumption protects the environment and biodiversity for a long time. The project proponent will conduct regular surveys and assessments to monitor the usage and condition of the ICSs. These surveys will be conducted at least biennially to ensure that the stoves are still in use and functioning properly. The project proponent will continue to build the capacity of local stakeholders, including local partner and government agencies, to ensure the long-term sustainability of the project. This will include training and workshops on sustainable practices, environmental protection, and human rights. In addition, the project proponent plans to distribute new ICSs to replace the old ones from the sixth year of the crediting period. Since the lifetime of the ICSs is seven years, they can be still used for 2-3 years after the end of the crediting period. If the operation of the project can achieve the expectation of the project proponent, it plans to implement more ICS projects in Kenya.

2.2 Stakeholder Engagement

2.2.1 Stakeholder Identification

The process used to identify stakeholders likely impacted by the project shows below:

1. Initial Scoping and Community Engagement:

Conduct preliminary research to identify target communities and hold initial meetings with local leaders for preliminary feedback.

Research methodology:

- A preliminary picture of the socio-economic, cultural, and environmental context of the target communities.
- Identification of key challenges and opportunities in the project area (e.g., poverty, lack of infrastructure, environmental concerns).

The outcome of the background understanding of the project has been discussed in Section 2.1.8 above.

2. Stakeholder Mapping:

Identify key groups including households, community organizations, local businesses, government agencies, and NGOs, ensuring vulnerable groups are considered.

Preliminary stakeholder List:

- ICS end-users;
- Stove manufacturer;
- Stove distributor;
- Representatives of local authorities;
- Non-governmental organization (NGO)

3. Detailed Stakeholder Analysis:

Perform social and economic impact assessments to evaluate how different groups will be affected.

4. Documentation and Communication:

Document all findings and clearly communicate project objectives and potential impacts using various channels.

Based on the above steps, the ICS end-users, government authorities, NGOs as well as stove manufacturer and distributor are identified as stakeholders. Iceberg also encouraged anyone who are interested in the project to participate in the local stakeholder consultation process and identified them as stakeholders. Iceberg invited local authorities and the local

people employed under this project who are directly impacted by the project to participate in the decision of the project. Local non-governmental organisations (NGOs) including Iceberg's partner who are working on topics relevant to the project are stakeholders too.

This four-step identification process ensured that all groups potentially affected by the project were included, with particular attention to vulnerable and marginalized populations. This fulfills the requirements of Paragraph 2.2.1 and 2.2.2 of SD VISta Standard Version 1.0.

2.2.2 Stakeholder Description

Relevant stakeholders have been identified as:

(a) The ICS end-users

The ICS end-users are directly affected by the project. It reduces the drudgery of the local people through time savings in cutting, collecting, and carrying firewood from trees far away from households as well as cooking over toxic smoky open fires.

(b) Stove manufacturer and distributor and its employees

The manufacturer who is also the distributor of project ICSs is a local enterprise. It hires more workers to produce and distribute ICSs for the project. The company and its employees are directly influenced by the project.

(c) Representatives of local authorities

The support from local government is very crucial for the implementation of the project. It provides indispensable information and authorization for the project. It also help the project implementers to collect feedback from end-users.

(d) Non-governmental organization (NGO)

The NGO has deep knowledge of the community, ensuring the project meets real needs and is culturally appropriate. The partnership will strengthen the NGO's capacity and visibility, enhancing its role in community development.

2.2.3 Stakeholder Consultation

Stakeholder consultation process:

- For ICS end-users:

The project proponent has conducted a baseline survey in several villages to gather feedback, and understand local needs and concerns. According to the results of the survey, it is clear that women and girls spend more time in household chores. Specific demographic groups (e.g., women, youth, elders) were encouraged to participate the meeting (Paragraph 2.2.5 of SD VISta Standard Version 1.0). Utilize local community leaders and representatives to facilitate the consultation process and build trust.

- For stove manufacturer and distributor and its employees:

The producing, transportation and distribution of the project ICSs need more workers. The project proponent has conducted targeted outreach and consultations with women and low-income households to encourage to apply for the jobs created by the project.

- For representatives of local authorities:

The project proponent met with regional and municipal authorities to align the project objectives with local development plans and policies.

- For NGO:

Iceberg's local partner who is an NGO helped prepare local stakeholder consultation meeting. And it is responsible for assisting Iceberg in local project operations.

Stakeholder consultation meeting was held separately on 16/05/2022 in Kiambu County and on 19/05/2022 in Muranga County. These locations were chosen as they are representative of the diverse regions within Kenya and provide a good cross-section of the target population. Kiambu County is located in the central region and has a mix of urban and rural areas[10], while Muranga County is predominantly rural[11]. The attended stakeholders including: Villager representatives and village leaders from the following villages: Kiambu County, Nyaga Location, Ngewa village, Kanjai village, Giathieko village. Muranga County, Mugumoini Location, Nguthuro village, Manyungu village and Matutoini village, the Chief and Assistant Chief of Kiambu county, the Chief and Assistant Chief of Muranga county, the representative of local NGO- JAMBO CAPITAL INITIATIVE (JCI). 59 villagers, 1 from stove manufacturer, 1 from NGO, and 7 representatives of local authorities have attended the meetings.

These meetings aimed to introduce the project and collect opinions from all types of stakeholders identified above. For introduce the project and collect opinions from all the types of stakeholders identified above, various inviting methods were applied for the stakeholder consultation meeting. For the convenience of stakeholders, the invitations were in both English and Swahili. The invitation was sent to villagers on 08/05/2022 through broadcast in villages in local language- Kikuyu to make sure everyone can understand (Paragraph 2.2.6 of SD VISta Standard Version 1.0). Some local people were invited by phone call. For national and local officers and entrepreneurs, invitation letters were sent to them as formal invitation on 14/05/2022. Local NGO was invited in person.

[10] https://kiambu.go.ke/kiambu-county/

[11] https://muranga.go.ke/

Figure 2: The invitations

The agendas of two stakeholder meetings were almost same. First, the chief of the area introduced himself and welcomed all the stakeholders. He welcomed Iceberg's local partner JCI, the stove manufacturer and distributor, to address the stakeholders what he did and the team which would manage the project.

Then the representative of Iceberg briefly described the relationship with Iceberg and why they had decided to provide the cook stoves for free. The stakeholders asked him a few questions and he handled all the issues effectively.

The chief told the attendees that the objective of the meeting was to receive feedback about the project from all stakeholders involved and therefore everybody was free to present his/her opinions concerning the project, which would be considered during the implementation of the project.

After that, the representative of local partner explained the full scope of the project using Kikuyu language which is the native language of the stakeholders. He described the features of the Jiko Kisasa ICS and he made the stakeholders understand that it has passed the boiling water test which was done by KIRDI meaning that it is proven that it will without a doubt help them save on firewood and time taken to prepare meals.

He also explained to them that a survey was done about the people who have the cook stove already. Their response confirmed the fact that it will actually save a large extent on the amount of firewood used and the time spent to cook mainly because the heat is well concentrated within the Jiko Kisasa ICS.

Figure 3: The photos of the stakeholder meeting

Information about potential cost, risks and benefits was shared with each stakeholder group:

- For ICS end-users:

The project enables rural people of Kenya to have access to clean cookstove, reducing time on collecting firewood and cooling, as well as save money on buying firewood. Project is financed by the project proponent, with no cost or risk to ICS end-users.

- For stove manufacturer and distributor and its employees:

The project needs plenty ICS produced locally, which enables stove manufacturer to expand its production capacity. It hires more workers, and the employees have a stable income and improved standard of living. There is no cost or risk to them.

- For local authorities:

The ICS is a basic livelihood service. There is no cost or risk to local authorities.

- For NGO:

The NGO is experienced in operating projects. There is no cost or risk to them.

Since there is no negative opinion received from stakeholders during stakeholder consultation, no project design has been changed accordingly.

During the baseline survey and awareness-raising visits, we have paid special attention to optimizing benefits for any marginalized and vulnerable groups. Women, the elderly and low-income groups were the focus of attention, and their demands and opinions were carefully listened to. And those who had the ability to work were encouraged to actively apply for job opportunities.

Question and answer session about the project

The presentation was followed by a Q&A session about the project (Paragraph 2.2.7 of SD VISta Standard Version 1.0). The Q&A are shown as follows:

Question 1: Will we be trained on how to install the cook stove?

Answer: The stakeholders were assured that a person who will demonstrate how the Stoves are installed effectively to ensure that they survive for a much longer period will be availed at no cost.

Question 2: Can I get a cook stove if I already have another one?

Answer: The cook stoves will only be distributed to those who do not have one at the moment since we want to capitalize on maximizing the results.

Question 3: Will the leaders be compensated for their time.

Answer: This is a community based program and the stakeholders were requested to volunteer their services to ensure that their village members are assisted. They were reminded that leadership is about service to the people we are leading.

Question 4: Is it possible to have Bio Gas installed in our homes also.

Answer: This is not part of what has been approved for now but we will try to negotiate with Iceberg to see whether they can have this as their next project.

In the end, continuous input and grievance mechanism was discussed.

2.2.4 Continued Consultation and Adaptive Management

In this session the participants discussed how to keep contact between the users of the cookstoves and JCI as well as the representative of Iceberg in Kenya. We agreed on the following

1. Avail a hotline that would be used to complain any problems concerning the project by phone.
2. Have a hard cover book to record any incidences or occurrences with the village elders.
3. Ensure that a close collaboration is groomed and maintained between the representatives of JCI and Iceberg with the users and the village elders.

The following phone number of JCI was available to the stakeholders 0721420243.

The following email addresses are also used for inquiry or comment on the project.

Iceberg: Mr. Ji BAO baoji@icebergchina.com

JCI: Mr. Julius G Gathuru info@jambocapital.co.ke

The village leaders are in charge of reporting the problems stated in the books. The representative of JCI checks the opinion books quarterly to see the problems reported and find solutions with users. Once a problem is identified, the representative of JCI will work with the users to find a solution within a maximum of 30 days. If the issue requires additional time to resolve, the users will be informed of the expected timeline and the steps being taken to address the problem. They will also report any unresolved issues to Iceberg and JCI.

The above mechanisms for stakeholder consultation at the project's inception maintain during the project's operation for ongoing communications (Paragraph 2.2.8 of SD VISta Standard Version 1.0). The project proponent and local partner seek input from stakeholders and consider their feedback in project design and implementation. Any significant input that necessitates updates to the project design will be reported as a project description deviation. This procedure expected to address disputes and concerns raised by stakeholders throughout the project's lifecycle.

2.2.5 Anti-Discrimination

Iceberg distributes ICSs to local people who uses traditional low efficiency cooking solutions without distinction in genders, races, religions, educational backgrounds or any other aspects. The local factories and NGO cooperated with Iceberg also dedicate to the elimination of discrimination. They need more employees to implement the project. Iceberg has a Non-Discrimination Policy, and has made a presentation to staff and partners. Trainings about it have been provided to staff. Vocational training for employees also included it. Iceberg and local partners dedicated to make sure that women, persons with disabilities, and minority have equal chance to get the jobs.

2.2.6 Worker Training

The implementation of project needs plenty of local people to participate in production, distribution or use steps. They get relevant skills and sustainable development and global citizenship education through training by project proponent. Besides technical skills, the workers have been trained about the management structure, regulations and worker rights. The training will also include preserve and protect cultural heritage during the implementation of the project. The workers have been trained for sexual harassment prevention and reporting, which is specialized for vulnerable female.

Three trainings about project implementation have been provided to staff, respectively on 30/11/2022, 10/05/2023 and 16/04/2024. The trainings including sustainable project management, carbon accounting, and environmental monitoring, and also included context of anti-discrimination, work safety etc. The monitoring plan has been carried out by qualified personnel trained for quality assurance and quality control. The workers have been trained for sexual harassment prevention and reporting, which is specialized for vulnerable female.

2.2.7 Equal Work Opportunities

Iceberg is dedicated to make sure that all stakeholders, no matter their genders, races, religions, educational backgrounds or any other aspects, have been given an equal opportunity to fill all work positions. Recruitment advertising for the local villages have been given before the hiring of the full-time and part-time staff for the project. The recruitment advertisement has been provided in Swahili for them to understand.

The project also encourages women, persons with disabilities, and minority to apply the jobs.

Equal opportunities are provided in the context of gender for employment and participation in consultation and project activities. This ensures that both men and women have the same opportunities to contribute to and benefit from the project. The project also mandates equal pay for equal work, ensuring that compensation is fair and non-discriminatory.

2.2.8 Workers' Rights

Iceberg and its local partners have a labour contract with each worker. Before the workers sign it, the contracts have been explained explicitly to make sure that they could understand their rights and obligations. The contract terms conform with Kenya's Employment Act[12]. Trainings have been held to workers, covering workers' rights under international standards and Kenyan national labour laws. The training specifically addressed:

Key Rights: Freedom of association, elimination of forced labour and child labour, and non-discrimination.

[12] https://new.kenyalaw.org/akn/ke/act/2007/11/eng@2024-04-26

Specific Protections: Equal opportunity, equal pay for equal work, and policies against sexual harassment.

Safe Working Conditions: Protocols for a safe and healthy work environment.
The training outcome confirms that participants successfully understood their rights and relevant laws.

2.2.9 Occupational Safety Assessment

The project activity involves producing and distributing ICSs. And monitoring plan also needs workers to implement. The occupational safety hazards may be production accident, transport-related accidents, stealing of parts. Iceberg has taken the above risks into consideration. To reduce the risks, Iceberg cooperates with local experienced NGO and hire local workers. They are very familiar with the communities, language and local culture. This understanding of traditional values, respect, and working environment in the communities helps Iceberg a lot. The factory has safety policy to mitigate the occupational safety risks in the cookstove producing for workers, and also provided training to staff about work safety.

The ICS uses firewood only. It is assumed not cause any extraordinary risks. Fire burn (especially for kids), road accidents, or minor social disputes during delivery and demonstration activities may be main risks. Risks are minimized by informing the end-users and workers about them, and by properly training.

2.2.10 Feedback and Grievance Redress Procedure

Iceberg and its local partners have already established grievance mechanism in the project area, which has been explained to the stakeholders during stakeholder meeting and the project implementation progress (Paragraph 2.2.14 and 2.2.15 of SD VISta Standard Version 1.0). The stakeholders or anyone who had not previously been identified but affected by the project can express any complaint.

They have put opinion books in villages so that stakeholders can write down their grievances. The village leaders are in charge of reporting the problems stated in the books. The representative of local partner will check the opinion books quarterly to see the problems reported and find solutions with users. They could also report problems to their village leaders, who will transfer these opinions to Iceberg and local partner.

The details on procedure for feedback and grievance have been made public on website of Iceberg as the following, which is accessible to all stakeholders of the project:

http://www.icebergchina.com/ensnew/contents/304/95.html

People can complaint to local leaders or JCI directly by calling, cell phone message, email and opinion books. They can contact Iceberg by calling and email too. The grievance procedure was first introduced and explained in detail during the initial stakeholder consultation meetings. During the distribution of cookstoves, JCI field staff verbally reiterated the grievance procedure to the end users too.

A grievance can be submitted through any of the channels above. JCI staff will formally acknowledge receipt of the grievance within 20 working days and log it in a central grievance register. Iceberg, in cooperation with JCI, will investigate the grievance. The target timeframe for resolution is within 15 working days from the date of acknowledgement. For complex issues that require more time, the complainant will be informed of the delay and the revised timeline. Once a decision is reached, a clear response will be provided to the complainant using the most appropriate method (e.g., a written entry in the opinion book, a phone call, or an email), explaining the outcome and any actions taken. If the complainant is not satisfied with the resolution, they can appeal the decision within 10 working days by contacting Iceberg's General Manager directly via email or phone. The appeal will be reviewed, and a final decision will be communicated within a further 10 working days.

2.2.11 Feedback and Grievance Redress Procedure Accessibility

The details on procedure for feedback and grievance have been made public on website of Iceberg as the following, which is accessible to all stakeholders of the project: *http://www.icebergchina.com/ensnew/contents/304/95.html*

Additionally, it has been socialized and publicized to communities throughout the project location on local notice boards in Swahili.

Public Comment:

Comments received by Verra during the public comment period 18 October 2024 to 17 November 2024. After the conclusion of the public comment period, we received public comments forwarded by Verra as shown below. We promptly addressed the stakeholder's inquiry, and our response was relayed to them by Verra.

Comment 1

This project is a joke. They have done barely any research of the local context and compared to a KCJ, their stove is not any better. In the area they laid out, Kiambu/Thika are wealthy areas due to their proximity to Nairobi and most cook on charcoal, not wood, and their stove is for wood biomass so its less relevant. It is not at all feasible to distribute the number they propose, 100k, in that area.

PP Reply:

The fuel for KCJ is charcoal[13], which is mainly used in urban area. The purpose of the project is to replace the old low efficient baseline cookstoves in rural area of Kenya. According to public literature, Kenya has one of the largest rural populations that still rely

[13] https://cookswell.co.ke/product/kcj/

on wood fuel as a primary source of energy for cooking[14,15]. So we chose the Jiko Kisasa improved cookstove, which has a bigger chamber for firewood. We only distributed the project ICS to the household who use wood for fuel and has no improved cookstove yet. We believe there are a lot of families out there that need these improved cookstoves.

Comment 2

The fNRB in the proyect is calculated as 0.9269. When dividing total biomass losses in Kenya between 2010 and 2022, by all possible causes, from land clearing to urbanization, over woodfuel use in wood equivalent for the same period, the fNRB values fall below 45%. The true value MUST be below 44 because you can't claim more degradation and deforestation than observed. Just like claiming that the earth is flat is hard to prove. We are in the same level of discussion here. You Verra know these numbers are insanely inflated, as you know the earth is not flat, and yet your are doing nothing to fix them (because you proft from overcrediting). You are simply exploting the climate crisis. My only and last question would be: how can y'all sleep at night?

https://www.linkedin.com/posts/adrian-ghilardi-03833b14a_for-those-interested-in-cookstove-projects-activity-7257086436200361984-SaMM?utm_source=share&utm_medium=member_desktop

PP Reply:

According to "TOOL30: Calculation of the fraction of non-renewable biomass, version 3.0", equation below is used to calculate f_{NRB}:

$$f_{NRB} = \frac{NRB}{NRB + RB}$$

Where:

fNRB	=	Fraction of non-renewable biomass in the applicable area in the relevant period (fraction or %)
NRB	=	Quantity of non-renewable biomass consumed in the applicable area in the relevant period (tonnes)

[14] https://www.researchgate.net/publication/353357800_Barriers_to_the_Adoption_of_Improved_Cooking_Stoves_for_Rural_Resilience_and_Climate_Change_Adaptation_and_Mitigation_in_Kenya

[15] https://www.sciencedirect.com/science/article/pii/S221462962100164X

RB	=	Quantity of renewable biomass that is available on a sustainable basis in the applicable area in the relevant period (tonnes)

No relationship between parameters NRB or RB and biomass losses or woodfuel use. The calculations are inconsistent, and therefore the results are should not compared in this way. In addition, the f_{NRB} of the project has been revised to 0.89 based on updated data.

Comment 3

I forgot to add my name and contact details in my previous email explaingin that Kenya fNRB can't go higher than 44%, most probably around 30% as MoFuSS estimates; and finally asking how could you sleep knowing the damage you are doing to the planet by registering these projects.

PP Reply:

We used TOOL30 (Version 3.0) to calculate f_{NRB} which was in line with the applied methodology VMR0006. Please refer to the calculation sheet we submitted this time. The VCS PDD was submitted for listing on July 2022, and completed the validation on May 2023. The Information note for Development of default values for fraction of non-renewable biomass published by UNFCCC on October 2023, therefore there was no comparison with this data. The reason why MoFuSS estimates lower than above projects maybe including:

In Para 24, Section 2.5, Page 9 of latest "Updated f_{NRB} Values for Woodfuel Interventions", which was published by Ghilardi and Bailis using MoFuSS model[16], it says "Note these datasets are all 10 or more years old. While this may miss some of the changes that have occurred in the last decade, this is useful for our approach because we typically begin our simulations using a base year ~10 years in the past and calibrate our models to observed changes that occurred over leading up to 2010". But when we calculated the f_{NRB}, we used the latest data. This makes a difference in the outcome.

In addition, the related VCS project was registered on Feb. 2024 and the f_{NRB} value was confirmed at that time. It is not in the scope of this SD VISta project.

Till now, we have distributed more than 26,000 ICSs in Kenya. Based on feedback from distribution sites, most of people who received the stoves are happy. We think the project is at least meaningful and helpful to them.

[16] https://cdm.unfccc.int/Sunset_CMS_ControlledSlots/public_inputs/sunsetcms/storage/contents/stored-file-20240624161613578/Report_on_Updated_fNRB_Values_20%20June%202024.pdf

2.2.12 Stakeholder Access to Project Documentation

The project details were explained to stakeholders in the stakeholder consultation meeting before it was implemented. The full project documentation has been uploaded on VERRA website and the same ones have been publicized on the Iceberg website during the whole crediting period of the project as the following linkage:
http://www.icebergchina.com/ensnew/contents/304/95.html

2.2.13 Information to Stakeholders on Assessment Process

Iceberg and its local partners inform end-users that they are participating in a project that distributes the ICS free of charge to improve their respiratory health, the family economy, and the environment. They are informed in advance that the use of ICS generates carbon credits which in turn are used to cover the cost of ICS production and distribution through donation and carbon transfer agreement. To make sure that all the stakeholders know the process of SD VISta project assessment, including the site visits of assessors, Iceberg and its local partners inform them through the website linkage, phone, email or in person. During the ex post monitoring and validation phase, stakeholders are notified in advance of the assessor's site visits. This notification is done through direct communication methods such as visited by local staff and phone calls, ensuring that stakeholders are aware of the visit and can prepare accordingly.

2.3 Project Management

2.3.1 Avoidance of Corruption

Iceberg has rules and regulations about the avoidance of corruption, code of conduct, and business ethics, and it has been made into the Iceberg's HR policy, the HR policy also applies to staff work with it. And it has a policy on avoidance of corruption, code of conduct, and business ethics too. All the staff of Iceberg should abide by them. These rules and regulations also have been provided to Iceberg's local partners, who should promise to comply with them for cooperation with Iceberg and avoid any form of corruption, including bribery, embezzlement, fraud, favouritism, cronyism, nepotism, extortion and collusion. Any person or organization which violates the anti-corruption rules and regulations of Iceberg cannot continue to work for or cooperate with Iceberg. Iceberg ensures that the implementation of project in accordance with all legal requirements and is held to the highest standard of operation.

2.3.2 Statutory and Customary Rights

The project activity involves distribution of ICSs to individual households only and it not involve any land use or acquisition.

2.3.3 Recognition of Property Rights

Iceberg distributes ICSs to individual households free of charge. The property right of ICS belongs to end-users while that of carbon credits generated from the project belongs to

Iceberg. The end-users have signed donation and carbon transfer agreements with Iceberg when they receive ICSs to confirm the property rights of ICSs and carbon credits.

2.3.4 Free, Prior and Informed Consent

The project is voluntarily implemented by Iceberg and its local partners, and end-users are free to choose whether they take part in the project or not. Free, prior, and informed consent takes place before distribution through signing of the donation and carbon transfer agreements when the end-users receive the ICSs, which clarify the property rights of the ICSs and the carbon credits generated from the project.

2.3.5 Restitution and/or Compensation for Affected Resources

The project activity involves distribution of ICSs to individual households only and it has not affected any resources.

2.3.6 Property Rights Removal/Relocation of Property Rights Holders

The project activity involves distribution of ICSs to individual households only and it has not led to any removal of property rights or relocation of property rights holders.

2.3.7 Identification of Illegal Activities

Theft and corruption may be identified during the implementation of the project. Iceberg and its local partner have avoided any corruption as per Section 2.3.1 of this document. The project proponent has rules and regulations about the avoidance of corruption, code of conduct, and business ethics. All the staff should abide by them. These rules and regulations have also been provided to its local partners, who should promise to comply with them and avoid any form of corruption, including bribery, embezzlement, fraud, favouritism, cronyism, nepotism, extortion and collusion, for cooperation. End-users have been reminded to keep their ICSs in safe places to reduce theft when they receive the ICSs.

2.3.8 Ongoing Conflicts or Disputes

The project activity involves distribution of ICSs to individual households only. There is no ongoing or unresolved conflicts or disputes over rights to lands, territories and resources and any disputes that were resolved during the last twenty years.

2.3.9 National and Local Laws and Regulations

Relevant local, regional and national laws, statutes and regulatory frameworks in Kenya:

- Kenya Vision 2030[17]

The Vision 2030 is Kenya's long-term development blueprint, which is implemented through a series of five-year medium-term development plans. It provides a policy

[17] https://www.planning.go.ke/kenya-vision-2030/

framework for “cost-effective, affordable, and adequate quality energy services” on a sustainable basis over the period 2004-2023. The promotion of clean cookstove development in Kenya is seen as an important intervention to fulfilling Vision 2030’s goal of increasing national forest cover to 10% by 2030 as well as creating wealth by building a reliable business for small, medium and large enterprises. The project ICS is a clean cooking service, which is in line with this policy.

- National Energy Policy 2014[18]

The energy policy seeks to ensure affordable, competitive, sustainable and reliable supply of energy to meet national and county development needs at least cost while protecting and conserving the environment. The policy among other things prioritises and promotes the development of local technologies in energy development and delivery. The project ICS reduces the consumption of woody biomass, which reduce the expense to buy it.

There is no local, regional and national laws[19] or regulations mandate to use the ICS or other clean cooking solution in Kenya.

2.3.10 Project Ownership

Iceberg purchases ICSs and distribute them to end-users free of charge. Before the distribution, end-users and Iceberg have signed an agreement to confirm that the property right of ICS belongs to end-users while that of the carbon credits generated from the project belong to Iceberg.

2.3.11 Grouped Projects

The project is not a grouped project.

[18] https://www.ctc-n.org/content/kenya-2014

[19] https://new.kenyalaw.org/legislation/

3 BENEFITS FOR PEOPLE AND PROSPERITY

3.1 Condition of Stakeholders at Project Start

(a) The ICS end-users

Social: The important agricultural sector of Kenya is one of the least developed and largely inefficient, employing more than 40 percent of the total population and 70 percent of the rural population[20]. However, only 29% of Kenyans have access to improved sanitation[21]. The under-five mortality rate is 43 per 1000 live birth[22]. The poverty headcount ration at 2.15 USD a day has increased from 29.4% to 36.1% from 2015 to 2023[23].

Economic: The unemployment has increased from 2.8% to 5.7% from 2015 to 2023[24], doubled in the last decade

Culture: The life level of the local residents was low. Most of them still use low efficiency traditional three-shone open fire at project start. They spend plenty of time on cutting, collecting, and carrying firewood from trees far away from households and exposed to toxic smoke during cooking, especially for women and children. There is no significant change in this element in the past decade.

Figure 4: The photo of a woman who is cooking

[20] https://www.usaid.gov/kenya/agriculture-and-food-security

[21] https://www.unicef.org/kenya/water-sanitation-and-hygiene

[22] https://www.unicef.org/kenya/health

[23] https://data.worldbank.org/country/kenya?view=chart

[24] https://data.worldbank.org/country/kenya?view=chart

(b) Stove manufacturer and distributor and its employees

Economic: The stove manufacturer and distributor is a small scale enterprise. It does not have many manufacturing equipment and employees. The investment for the implementation of the project helps them obtain enough investment to purchase more equipment and hire more employees, which contributes to the development of stove industry in Kenya. There is no significant change in this element in the past decade.

Social: The efficient and durable designs are more popular with users. This choice of technology reflects the local community's quest and expectations for energy efficiency and durability. There is no significant change in this element in the past decade.

Culture: The thermal efficiency of stoves the manufacturer produced needs to be measured by a water boiling test to ensure that they are efficient. This constant focus on performance is part of the manufacturer's corporate culture. There is no significant change in this element in the past decade.

(c) Local authorities

Social: Local authorities face significant challenges in the provision of social services. Residents in many areas are unable to meet their basic needs owing to the lack of modern energy infrastructure. There is no significant change in this element in the past decade.

Economic: Local authorities have limited financial resources and rely mainly on agricultural income. However, due to inefficient production and poor market channels, agricultural revenues are difficult to meet public expenditure needs. This economic situation limits local government investment in infrastructure development, social services and economic development projects. There is no significant change in this element in the past decade.

Culture: Kenya is home to over 40 ethnic groups, each with distinct languages and customs. Local authorities often reflect the cultural values and traditions of these communities.

(d) NGO

Social: The project will empower women, who are primarily responsible for cooking, by reducing their time spent collecting firewood and improving their health, promoting gender equality. There is no significant change in this element in the past decade.

Economic: The project will create jobs in NGO. There is no significant change in this element in the past decade.

Culture: NGO will work closely with communities to understand their needs and preferences, and adapting the project accordingly.

Diversity and the interactions:

The ICS end-users vary widely in terms of family size, education levels, and gender roles. Women often play a central role in cooking and are thus primary users of cookstoves. The implementation of project creates plenty job opportunities for local people. Households rely

on local authorities for support, while local authorities act as intermediaries between households and project implementers. Local authorities interact with all these groups to provide regulatory support and technical assistance.

Local officers welcome the project because the implementation of project improves the living standard and economic situation within project boundary.

3.2 Expected Impacts on Stakeholders

Impact #1	Number of households receiving project ICS and still in use
Type of Impact	Positive, actual, direct
Affected Stakeholder Group(s)	ICS end-users
Resulting Change in Well-being	Reduce inadequate cooking, the burden of firewood collection, the time to prepare food, the cost to buy firewood. Especially for women and children.

Impact #2	Average monthly savings due to reduction in expenditure on purchase fuel after introduction of project ICS
Type of Impact	Positive, actual, direct
Affected Stakeholder Group(s)	ICS end-users
Resulting Change in Well-being	The cost on buying firewood is will be reduced after the implementation of the project.

Impact #3	Percentage of households reporting indoor air quality improved since they received the project ICSs.
Type of Impact	Positive, actual, direct

Affected Stakeholder Group(s)	The person in charge of cooking(most of them are women).
Resulting Change in Well-being	Reduce people's exposure to high PM2.5 and high CO due to higher efficiency of combustion.

Impact #4	Average time saving on cooking and fuel collection in the project scenario by female per household per day
Type of Impact	Positive, actual, direct
Affected Stakeholder Group(s)	Female ICS end-users
Resulting Change in Well-being	Reduce the time spent on firewood collection and cooking for female.

Impact #5	Number of employees provided skill development training
Type of Impact	Positive, actual, direct
Affected Stakeholder Group(s)	Employees from stove manufacturer and distributor, and from NGO
Resulting Change in Well-being	The implementation of project needs plenty of local people to participate in production, distribution or use steps, who get relevant skills and sustainable development and global citizenship education through training by project proponent and its local partners.

Impact #6	Number of employees hired for the project
Type of Impact	Positive, actual, direct

Affected Stakeholder Group(s)	Stove manufacturer and distributor, and NGO
Resulting Change in Well-being	It hires more workers to produce ICSs for the project. During the project crediting period, the project proponent and its local partner, which is also an NGO, are in charge of maintenance and monitoring plan, which also needs to hire local people.

Impact #7	Production capacity increased for the project
Type of Impact	Positive, actual, direct
Affected Stakeholder Group(s)	Stove manufacturer and distributor
Resulting Change in Well-being	The project plans to distribute 100,000 ICSs to end users across the country. It's a huge number. The local ICS manufacturer and distributor is a small enterprise before the implementation of the project. Our collaborating manufacturer expands production capacity to satisfy the needs of the project. Thus, the upstream and downstream supply chain benefits from the project.

3.3 Stakeholder Monitoring Plan

The project activity is distributing ICSs to households, which has a net positive impact on overall well-being of the people in the project site. A monitoring plan is needed to identify the monitored stakeholder groups, the types of measurements, the sampling methods and the frequency of monitoring and reporting.

Sampling method

The sustainable development indicators mentioned above have been monitored, which include impacts on mostly stakeholders of the project. The "health status" and "time spent on unpaid domestic and care work" need to be monitored by multi-stage sampling method as per "Standard sampling and surveys for CDM project activities and POAs (Ver9.0)" and "Guideline for sampling and surveys for CDM project and POA (Ver 4.0)":

Parameter	Monitor approach	Purpose	Affected Stakeholder Group(s)	Frequency

Number of households receiving project ICS and still in use	Monitored by ICS distribution database and project survey.	Determination of Impact #1	ICS end-users	At least biennial
Average monthly savings due to reduction in expenditure on purchase fuel after introduction of project ICS.	Monitored in project survey through questionnaire	Determination of Impact #2	ICS end-users	At least biennial
Percentage of households reporting improvements in food security and nutrition status	Monitored in project survey through questionnaire	Determination of Impact #3	ICS end-users	At least biennial
Percentage of households reporting indoor air quality improved since they received the project ICSs.	Monitored in project survey through questionnaire	Determination of Impact #4	ICS end-users	At least biennial
Average time saving on cooking and fuel collection in the project scenario by female per household per day.	Monitored in project survey through questionnaire	Determination of Impact #5	ICS end-users	At least biennial

Sampling plan

The target population for the multi-stage sampling is all the population who receives the project ICS. The sampling method combines the cluster and simple random sampling approaches in a two-stage sampling scheme which enables us to randomly select some villages from all the villages and then randomly sample some households from all the households within those sampled villages.

Iceberg and its local partners collect data through interviews, surveys, direct observations and group discussions about stakeholders' financial, health and employment records. Local partners are experienced in operating donation projects, and Iceberg also trained them to make sure they follow closely to the monitoring plan. They collect primary information through regular visits and interviews with the end-users and other stakeholders. The data from these interactions has been compiled into reports and submit to the Iceberg. To make sure the data is credible, the data may be cross checked by a third-party or Iceberg.

Considering the heavy workload of collecting data, Iceberg and local partners may use an app and storage cloud to collect data. Surveys are designed to monitor stakeholders' improvements and benefits by implementation of the project.

Identification and sensitization visit

Before the implementation of the project, local partners of Iceberg should conduct a one-time identification and sensitization visit to local villages. Local partners identify and visit

villages which are suitable for the project activity. They have discussions with the leaders of villages and villagers. They also communicate with other stakeholder such as local officers and NGOs, and search for their support and cooperation. In discussion with stakeholders, they explain the project and its benefits on health, nutrition and climate change. Any questions raised are recorded and responded. After the project plan is accepted, a community-wide training session is held to introduce the project to all interested households. The training includes information on the multiple benefits and how they can participant in the project.

Distribution visit

The project ICSs are produced by a local manufacturer, which are portable and easy to use. When distributing ICSs to end-users, technicians explain how to use and maintain the ICSs. Local partners respond to any doubts or questions and leave a telephone number so end-users can contact Iceberg or local partners when needed. Before completing the visit, local partners ensure that the end-users are capable to prepare meals on their new ICSs.

Figure 5: The photo of distribution

Verification visit

During each time of the project verification, Iceberg and/or local partners conduct a multi-stage random sampling survey on the implementation of the project, including all the effects identified in the project's causal chain related to stakeholder well-being. End-users' using experience and stove condition are monitored and recorded in the questionnaires. Other stakeholders' opinion and suggestion also has been recorded.

3.4 Net Positive Stakeholder Well-being Impacts

(a) The ICS end-users

Improved cookstove is a basic service necessary to lead to a healthy and productive life, including saving time and money for wood fuel at the household level. The project reduces the drudgery undertaken by them especially for women and children through time savings in cutting, collecting, and carrying firewood from trees. The project also improve food security and nutrition status by reducing inadequate cooking. By using ICS, it reduces people's exposure to high PM2.5 and high CO due to higher efficiency of combustion, which leads to faster cooking and more complete combustion. It also reduce the burn risk, significant to children and toddlers due to enclosure of the fire in the combustion chamber.

(b) Stove manufacturer and distributor and its employees

The manufacturer and distributor is a local enterprise. The producing, transportation and distribution of the project ICSs need more workers. It hires more workers to produce ICSs for the project. The project contributes to the scale-up of local business and organizations with the potential to create jobs in cookstove industry, such as productions, assembly, marketing and distribution of related devices.

(c) Local authorities

The living standard and economic income are improved by the implementation of the project, which have positive impacts to local governments on governance and tax revenue.

(d) Non-governmental organization (NGO)

The partnership will strengthen the NGO's capacity and visibility, enhancing its role in community development.

4 BENEFITS FOR THE PLANET

4.1 Condition of Natural Capital and Ecosystem Services at Project Start

Kenya is renowned for its remarkable diversity of landscapes, animals and cultures. Its colourful landscapes range from the north Chalbi Desert to the snowy peaks of Mount Kenya, from the white beaches of the Indian Ocean to the shores of Lake Victoria, from the rolling plains of the Masai Mara to the valley floor of the Great Rift Valley, which is a UNESCO World Heritage Site[25]. The topography, soils, hydrology, plants, animals work with people of each eco-climatic zone create unique local ecosystems, lowland and mountain forests, wooded and open grasslands, semi-arid scrubland, dry woodlands, inland aquatic, as well as coastal and marine ecosystems. Kenya, ranks among the world's richest biodiversity nations and hosts over 35 000 species, including more than 7000 plant species and many endemic, rare, endangered and threatened species[26]. The 'big five' – elephant, rhino, buffalo, lion and leopard, can all be found in Kenya along with a huge variety of other species.

Kenyans from all walks of life rely on ecosystem services to sustain their daily lives and well-being. These services include wild and cultivated foods, medicinal plants used by 80% of Kenyans, soil erosion control, crop pollination and cultural services such as spiritual kayas in coastal Mjikenda, outdoor recreation and access to nature. Beyond the service sector, agriculture, forestry, and fishing account for over a quarter of Kenya's gross domestic product[27].

Forests play an important role in supporting the livelihoods of many communities in both rural and urban areas. As in other parts of the world, Kenya's forests are considered a valuable asset because of their role in providing a variety of ecosystem services. However, the continued demand for forest resources has led to substantial changes such as deforestation, conversion of formerly forested areas to cropland and pasture, illegal water extraction sites, introduction of exotic trees and grasses on native vegetation, and expansion of urban and peri-urban areas[28].

In rural areas of Kenya, over 95% of the population uses solid fuels for cooking[29]. The project activity reduces wood collection and deforestation within the local area through higher fuel efficiency.

[25] https://whc.unesco.org/en/statesparties/ke

[26] https://www.york.ac.uk/media/environment/images/kite/colincm/Natural-Capital-Kenya_PBNo.3_Business-Community.pdf

[27] https://www.awf.org/country/kenya

[28] https://doi.org/10.1080/21513732.2018.1529708

[29] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7446120/

According to Global Forest Resources Assessment 2010 Report of Kenya by Food and Agriculture Organization of the United Nations[30], the area of forests of Kenya in 1990, 2000, 2005 and 2010 respectively is $3708*10^3$, $3582*10^3$, $3522*10^3$ and $3467*10^3$ hectares, it has decreased 6.5% from 1990 to 2010.

4.2 Expected Impacts on Natural Capital and Ecosystem Services

Impact #1	Tonnes of greenhouse gas emissions avoided or removed
Type of Impact	Positive, actual, direct
Affected Natural Capital and/or Ecosystem Service(s)	GHG concentration of atmosphere, climate change
Resulting Change in Condition	The average annual GHG emission reduction from the project is expected to be 222,137 tCO_2e due to less firewood combustion for cooking and heating in the households.

Impact #2	Avoided deforestation due to consume less firewood of ICS
Type of Impact	Positive, actual, direct
Affected Natural Capital and/or Ecosystem Service(s)	Forest area, biodiversity, and water and soil, etc.
Resulting Change in Condition	The project helps local people consume less firewood as the ICS has higher thermal efficiency. It will save 108,435 t non-renewable biomass every year and it will result in a significant reduction of deforestation.

4.3 Natural Capital and Ecosystem Services Monitoring Plan

Sampling method

To monitor the impact on natural capital and ecosystem services, the following parameters need to be monitored, determined by multi-stage sampling method as per “Standard

[30] https://www.fao.org/forest-resources-assessment/past-assessments/fra-2010/country-reports/en/

sampling and surveys for CDM project activities and POAs (Ver9.0)" and "Guideline for sampling and surveys for CDM project and POA (Ver 4.0)":

Parameter	Monitor approach	Purpose	Affected Stakeholder Group(s)	Frequency
Tonnes of greenhouse gas emissions avoided	Monitored by ICS distribution database, project survey and fuel consumption survey.	Determination of Impact #1 and #2	ICS end-users	Biennial
Total non-renewable woody biomass fuel saved	Monitored by ICS distribution database, project survey and fuel consumption survey.	Determination of Impact #1 and #2	ICS end-users	Biennial

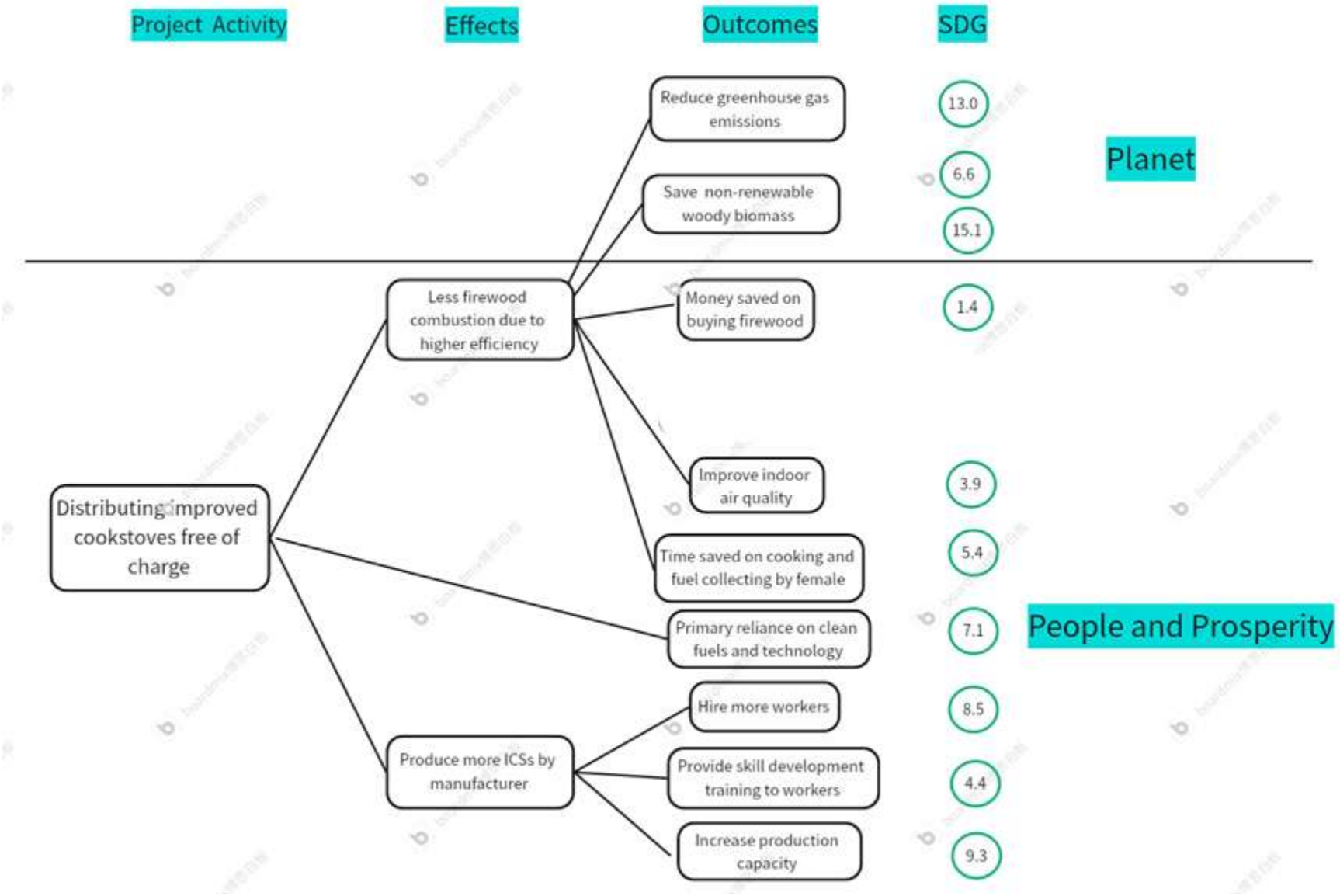
The above data is collected through survey and fuel consumption test, which is the responsibility of the local partners. Iceberg trains its local partners about the monitoring plan and supervise their work. The data may be cross checked by a third-party. The end-user households where the survey and test are conducted through multi-stage random sampling. The data from test and survey is recorded, analyzed and reported by Iceberg and its local partners. The monitoring and reporting will be conducted each time when verification of SD-VISta is conducted.

4.4 Net Positive Natural Capital and Ecosystem Services Impacts

By replacing traditional low efficient three-stone fires with high efficiency improved cookstove in households, the project increases energy efficiency resulting in less fire wood combustion, thus generate net GHG reductions. The average annual GHG emission reduction from the project is expected to be 222,137 tCO_2e. The crediting period is expected to be 10 years. Hence the total GHG emission reduction is 2,221,373 tCO_2e. The project saves 108,435 t non-renewable biomass every year and it result in a significant reduction of deforestation.

APPENDIX

Appendix A: Causal chain.


Project Activity
Effects
Outcomes
SDG
Distributing improved cookstoves free of charge
Less firewood combustion due to higher efficiency
Produce more ICSs by manufacturer
Reduce greenhouse gas emissions
Save non-renewable woody biomass
Money saved on buying firewood
Improve indoor air quality
Time saved on cooking and fuel collecting by female
Primary reliance on clean fuels and technology
Hire more workers
Provide skill development training to workers
Increase production capacity
13.0
6.6
15.1
1.4
3.9
5.4
7.1
8.5
4.4
9.3
Planet
People and Prosperity