



# The Catalytic Finance Accelerator

Mobilizing Carbon  
Investments for Sustainable  
Clean Cooking Solutions

JUNE 2024



# Today's Problem



## No one's life should be limited by how they cook.

Yet globally, 2.3 billion people depend on polluting, open fires or inefficient stoves to cook their food, harming health, the climate, and the environment. Women and girls, who often spend hours cooking and collecting fuel, are disproportionately affected.

- ▶ **3.2 million premature deaths each year** are attributable to household air pollution, predominantly generated from cooking.
- ▶ Over **450,000 children under 5 die each year** as a result of household air pollution, primarily in Sub-Saharan Africa and Asia.
- ▶ The **#1 environmental health risk globally** is air pollution.
- ▶ **\$2.4 trillion per year is the cost of inaction** on clean cooking, primarily from health costs.
- ▶ **Over 50% of black carbon emissions** come from burning solid fuels for cooking and heating homes.



# The Clean Cooking Alliance

**Clean cooking transforms lives by improving health, protecting the climate and the environment, empowering women, and helping consumers save time and money.**

The Clean Cooking Alliance takes a holistic systems approach to building the clean cooking ecosystem.

CCA is the global steward of the clean cooking ecosystem. CCA delivers an outsized impact by capacitating our global network of partners.

# Traditional Challenges in the Clean Cooking Sector

## Economic barrier

Many companies have struggled to align the high costs of offering clean cooking solutions with the limited purchasing power of consumers, resulting in many poor households being priced out or opting for low-cost, poor-quality alternatives.



## Dependency on public subsidies

While some companies have managed to grow, their expansion has often relied heavily on scarce public subsidies, with many remaining dependent on this financial support. This has deterred investors, who have seen limited growth potential and insufficient revenue from sales alone.





# The Catalytic Finance Accelerator (CFA)

**CFA aims to transform the clean cooking sector by leveraging carbon markets to unlock investment opportunities.**

The potential for clean cooking initiatives is greatly enhanced by a unique business model that incorporates both product sales and the generation of carbon credits. This dual revenue approach not only secures direct sales from consumers but also capitalizes on the environmental value of reduced emissions, creating a new income stream through carbon credits. Such a strategy significantly enhances the economic attractiveness of clean cooking solutions, making them more appealing to investors. By addressing and overcoming the economic limitations previously associated with clean cooking technologies, this approach opens new paths for capital infusion, promising both sustainable returns and broader market expansion.

# Our Beliefs



- ▶ **Valuing people's preferences in energy transition:** The practice of 'stacking' multiple cooking technologies often reflects cultural diversity and practical needs due to supply inconsistencies. A context-aware approach to the clean cooking transition is crucial. Integrating improved stoves and cleaner fuels must respect the real circumstances of households. Policies should be adaptable and equitable, ensuring a just and accessible transition to cleaner energy solutions for all communities.
- ▶ **National self-determination with reciprocal obligations:** National governments have the fundamental right to establish and enforce regulatory frameworks for clean cooking and carbon markets. Accompanying this right is the obligation to develop policies that promote orderly market growth. These policies should include establishing predictable and stable regulations, providing preferential fiscal incentives to reflect the public benefits derived from clean cooking and carbon markets, and investing in shared infrastructure to enhance private sector involvement.
- ▶ **Monetization of environmental and social impacts is necessary:** Monetizing the environmental and social impacts of clean cooking helps address funding gaps and accelerates universal access. While this approach encourages private investment, it does not replace the essential role of the state. Public investment remains crucial, not only to fulfill governmental responsibilities but also to facilitate and amplify the impact of private sector contributions, ensuring equitable access and benefits for all communities.
- ▶ **Smart subsidies promoting market-based approaches:** Market-based strategies provide a financially sustainable path to universal clean cooking access. Subsidies are essential in this endeavor, particularly where markets are weak or nonexistent, like remote rural regions. These subsidies must be smart and should enhance consumer agency, allowing them to choose and afford clean cooking solutions while maintaining direct links to sellers. This enables consumers to voice concerns or switch providers, incentivizing providers of cooking solutions. By encouraging market-like behavior and addressing barriers, subsidies help markets grow, attract investment, and remain sustainable.

# Pathway to Investment Growth in Clean Cooking

Sequence of changes needed to dramatically scale up investment in clean cooking solutions

**1 Equity investment and capacity building:** Public and private investments in equity and technical assistance for early-stage growth companies are crucial. These investments enable companies to achieve product-market fit, demonstrate their ability to generate substantial sales volumes, and establish robust after-sales customer relationships. This foundational phase is critical, as it helps companies build a proven track record, essential for attracting significant purchase agreements from clean cooking carbon project developers or securing initial direct investments in carbon projects.

**3 Revenue Cross-Subsidization:** The revenue obtained from selling carbon credits is used to subsidize the cost of clean cooking solutions. This cross-subsidization makes these technologies, and recurrent access to fuels, more affordable to low-income households, overcoming one of the major barriers to adoption.

**5 Increased Adoption:** As clean cooking solutions become more affordable, more households are likely to adopt them. In addition, as buyers demand verification of sustained use for continued payments, more projects are likely to invest in enhancing the use case of cooking solutions. Increased adoption and use not only has a direct positive impact on health and the environment but also serves to validate the underlying demand clean cooking solutions to potential new investors.

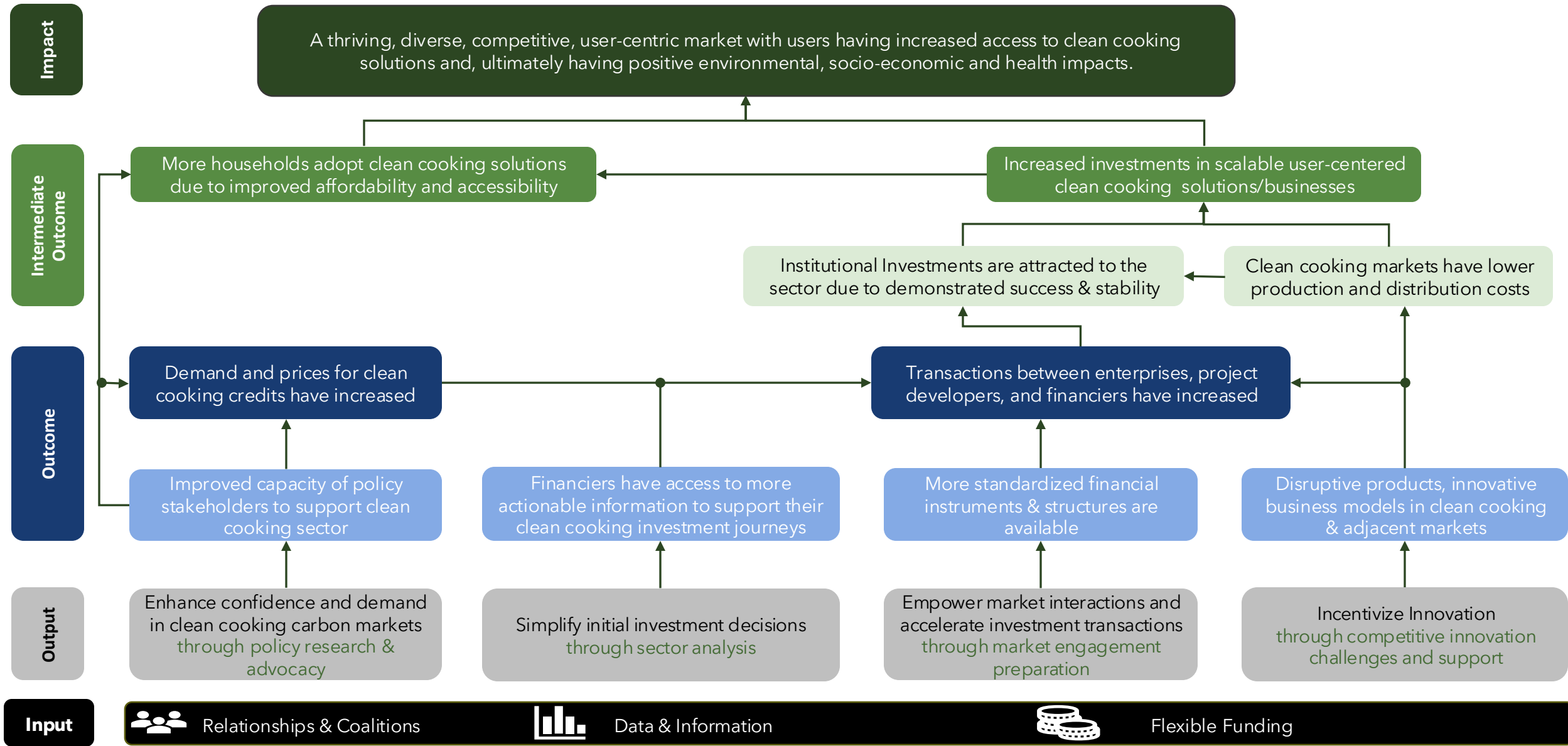
**7 Enhanced Viability and Attractiveness for Further Investment:** As the project demonstrates success and stability, it becomes a more attractive option for larger, institutional investors. This influx of additional capital can lead to further innovation, expansion into new markets, and even more impactful reductions in emissions.

**2 Initial Investment:** The initial funding from investors kick-starts the projects. These investors are typically motivated not only by potential financial returns but also by the environmental and social impacts. Investing in clean cooking technology can reduce pollution and improve health outcomes in communities that traditionally rely on less efficient, more harmful cooking methods.

**4 Generation and Sale of Carbon Credits:** By providing clean cooking solutions, these projects can reduce greenhouse gas emissions compared to traditional cooking methods like open fires or non-renewable fuel stoves. The reduction in emissions generates carbon credits, which can then be sold on carbon markets. These sales provide a direct financial return on the initial investment.

**6 Scaling and Market Expansion:** With growing demand, the project can scale up, leading to economies of scale. This typically results in lower production and distribution costs, making the project more economically viable and potentially leading to further price reductions for end-users.

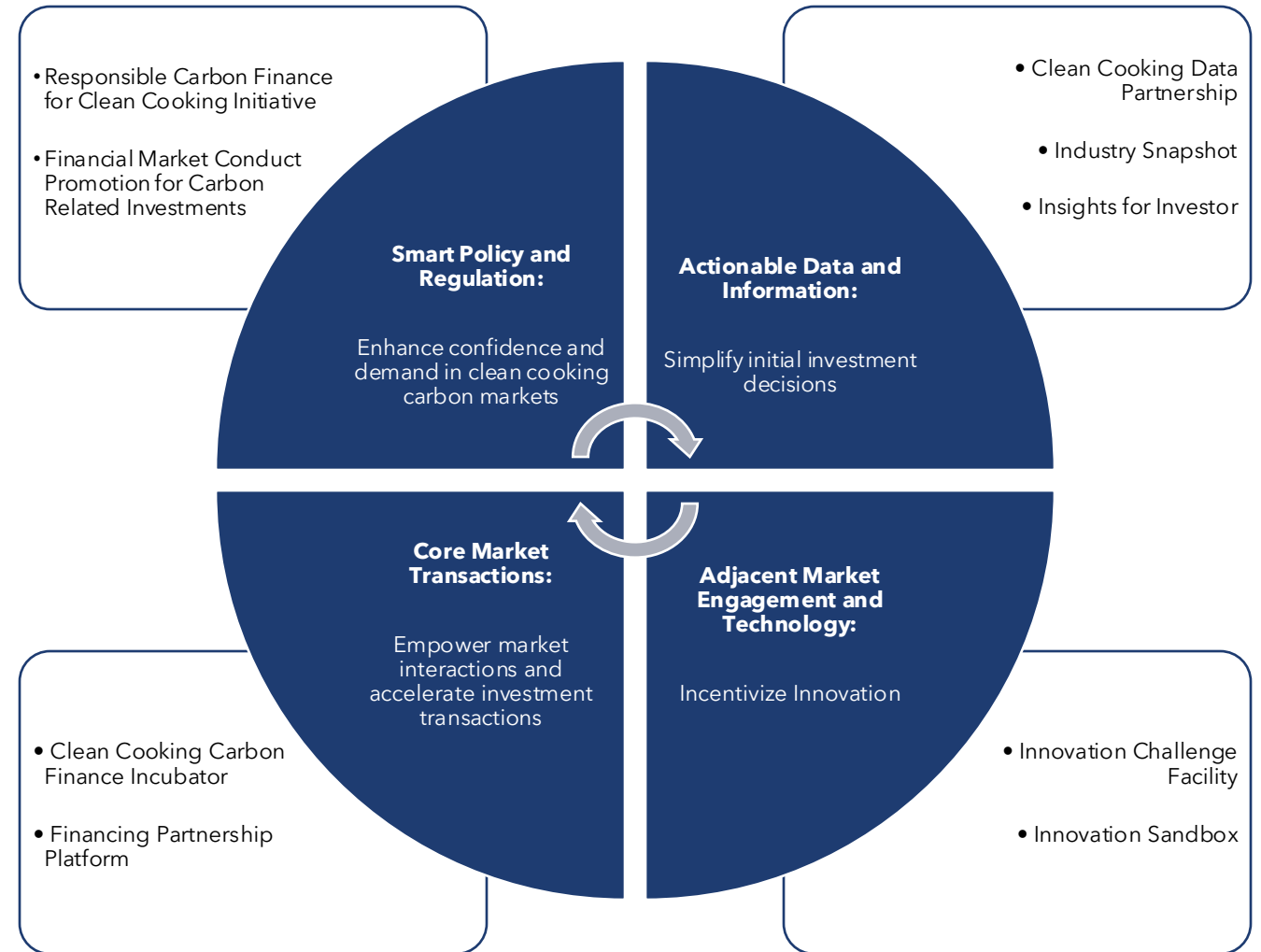
# Theory of Change







## Work-streams and Projects



# Unlocking Investment Potential

**The CFA unlocks the sector's investment potential by tackling four critical market challenges. CFA is working with industry stakeholders to:**

Capital providers possess a deep understanding of their business domains, making them pivotal in the advancement of clean cooking initiatives. By thoroughly addressing and aligning with their motivations and needs - including the imperative to assess and manage risks - we can attract substantial investment to clean cooking companies and clean cooking carbon projects.

Our analysis has identified a range of critical factors that influence different investor classes from public funders to impact investors, and from venture capital funds to banks. These factors include financial returns, portfolio risk management, measurable ESG outcomes, and reputation. Recognizing and catering to these complex interests is crucial for securing the involvement and support of diverse capital providers in clean cooking carbon projects.

## 1 Enhance confidence and demand in clean cooking carbon markets

Uncertainty about quality of carbon credits, its value as an asset, and the integrity of stakeholders who sell, buy and trade carbon credits have material impact on levels of demand for and investment in clean cooking carbon projects.

The CFA enhances buyer and investor confidence in clean cooking carbon markets by undertaking policy research, organizing buyer and investor forums, and engaging and collaborating with industry stakeholders to build consensus and advocate for changes in policies and practices.

## 2 Simplify initial investment decisions

Public and private investment in clean cooking carbon markets is complex because of technological diversity, geographical differences, and regulatory environments. These complexities make it difficult for investors to assess the potential impact and returns of their investments.

CFA elevates public and private investments decisions in clean cooking carbon projects by conducting in-depth sector analysis to underscore the unique advantages of clean cooking carbon projects, developing strategic partnerships with networks to aggregate and analyze data at scale.

## 3 Empower market interactions and accelerate investment transactions

Despite potential for significant market activity, there is a disconnect between enterprises and financial institutions that hinder optimal economic interaction. Enterprises struggle to meet investor requirements, while financial institutions lack tailored financial products that can support dynamic market interaction.

CFA empowers enterprises by preparing early-stage companies for carbon market engagement and optimizing strategies for established ones, while developing financial structures through collaboration with diverse funds, investors, and local financial institutions. In addition, CFA equips local financial institutions with understanding, strategies, and tools to sustainably support project development at scale, ensuring a synchronized and impactful investment landscape.

## 4 Incentivize innovation

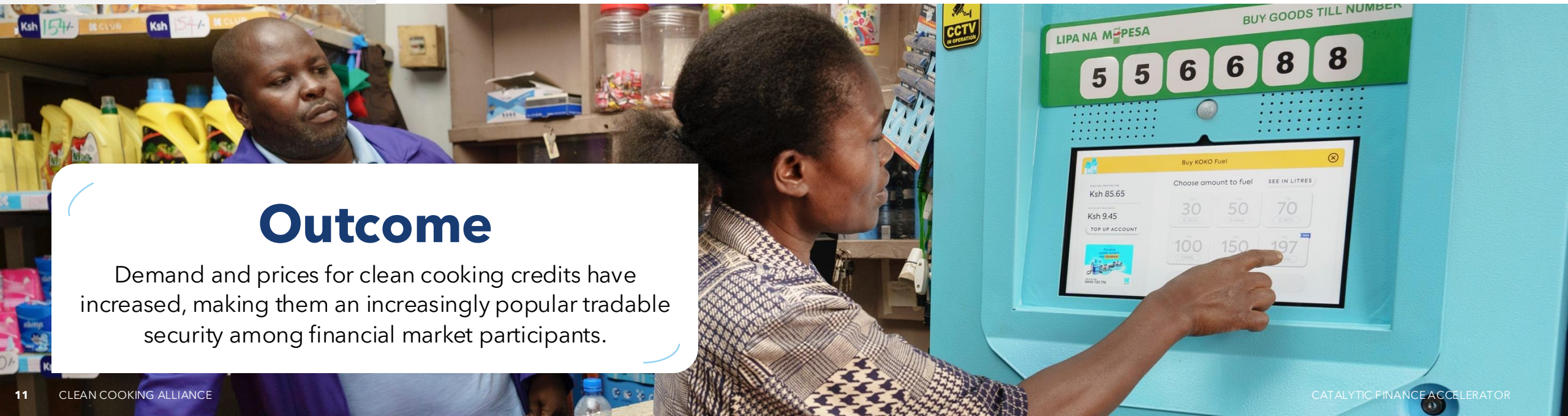
The clean cooking market faces deep structural issues that restrict market efficiency and expansion. These make clean cooking markets less attractive to investors. Traditional interventions, largely centered on meeting immediate market needs, offer only incremental improvements. These often fail to tackle underlying structural inefficiencies effectively. For instance, subsidies and basic technical training might boost short-term stove adoption, but these do little to address enduring challenges like sustainable fuel supply and integration of clean cooking with broader energy systems.

CFA hosts innovation challenge competitions and promotes cross-sectoral collaborations to solve specific problems in clean cooking and carbon markets that act as barrier to investment. CFA typically provides prizes combined with mentorship and technical assistance to incubate and accelerate cutting-edge disruptive innovations and offers shared risk-reward structures to the most scalable and impactful solutions.

# 1 Enhance confidence and demand in clean cooking carbon markets through policy research and advocacy

▶ **Engaging with industry stakeholders to build consensus on standards and practices.** For example, CFA involved 500 participants from the clean cooking and carbon sectors to create the Principles for Responsible Carbon Finance. These Principles, endorsed by over 155 organizations, are part of the Responsible Carbon Finance Initiative, aimed at establishing high standards of conduct in the clean cooking carbon market. By embedding these Principles into organizational decision-making and operations, we aim to ensure project-level compliance and foster a culture of excellence and responsibility across the industry.

- ▶ **Organizing buyer forums to align expectations and foster public commitments that can act as advanced market signals for investors and project developers.** For example, CFA is working with a group of buyers to develop “buyer commitments” to mirror project developer adoption of codes of conduct being developed by the Responsible Carbon Finance for Clean Cooking Initiative.
- ▶ **Conducting policy research to inform and advance public policies.** For instance, CFA is researching the potential market impact of a public policy intervention aimed at facilitating structured finance in clean cooking carbon projects through local lending supported by collateralized carbon credit offtake agreements. Additionally, CFA is collaborating with the Clean Cooking Delivery Unit in Kenya to support the Kenyan Climate Champion in convening a high-level inter-ministerial meeting to review the research findings and consider potential policy actions. This targeted approach aims to create a favorable policy environment that drives investment and growth in the clean cooking sector.



## Outcome

Demand and prices for clean cooking credits have increased, making them an increasingly popular tradable security among financial market participants.

## 2 Simplify initial investment decisions through sector analysis

- ▶ **Conducting in-depth sector specific comparisons** to underscore the unique advantages of clean cooking carbon projects. For example, each year CFA engages for-profit clean cooking enterprises and surveys them to get the latest view of the investable universe of clean cooking companies and understand their key operational data and impact footprint.
- ▶ **Aggregating and analyzing data at scale.** For example, CFA has a partnership with MSCI whereby CCA hosts the clean cooking specific subset of MSCI's carbon transactions database; increasing the transparency of the latest status of the clean cooking carbon market. CFA is exploring an investor survey to better document the funding available for enterprises over the next five years.

- ▶ **Creating resources to simplify early-stage investment decisions** to lower transaction costs for financiers looking for specific clean cooking-related information. For example, CCA hosts and updates the Investor Donor Resource Pages to help financiers to quickly find the latest insights on clean cooking technologies, trends, key markets, and innovations. CFA also offers a one-to-one service for financiers that reach out seeking specific information to help them navigate the sector effectively. CFA also generates a suite of knowledge products designed to increase awareness of clean cooking amongst financiers. For example, CFA releases the Industry Snapshot, Carbon Pulse report series, as well as one-off reports on key topics like unit economics.



## Outcome

Financiers have access to more actionable information to support and advance their clean cooking investment journeys.

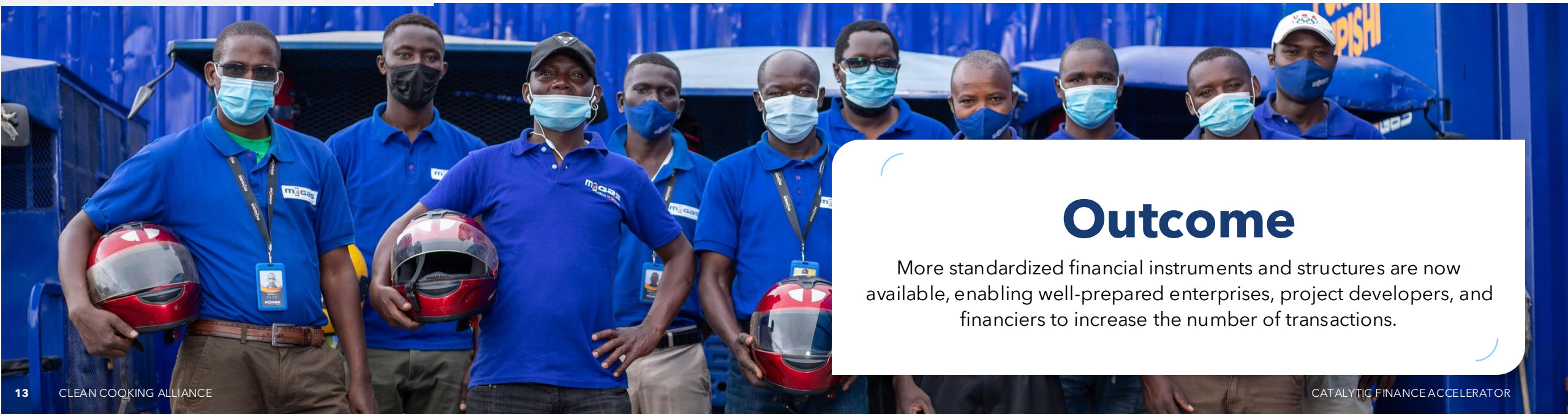
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## Empower market interactions and accelerate investment transactions through market engagement preparation

▶ **Preparing Enterprises for Carbon Market Success** by providing them with the knowledge, tools, and strategies needed to effectively engage in the carbon market. CFA addresses key challenges such as the lack of technical expertise, upfront capital, and operational capacity at the enterprise level while also improving their ability to engage with carbon offset buyers. For early-stage companies, CFA deploys the *Enterprise Carbon Capacity Accelerator* to assist companies in understanding the dynamics of the carbon market and developing tailored entry strategies. For example, For companies with established carbon teams and existing market presence, CFA deploys the *Financing Partnership Platform* to provide advanced strategic support to the companies in optimizing their existing carbon credit portfolios, identifying diversification opportunities, and refining market engagement strategies to better attract high-value buyers.

▶ **Equipping local financial institutions,** CFA provides local financial institutions with the necessary knowledge and tools to play an active role in supporting carbon market projects. It educates institutions on carbon market mechanisms across voluntary and Article 6 markets, while offering insights into international and local policies affecting carbon trading. By developing risk management frameworks tailored to carbon finance and establishing guidelines for evaluating and funding sustainable projects, CFA ensures that financial institutions can effectively manage risks. Additionally, CFA aligns their financial products to support sustainable project development at scale.

▶ **Developing financing structures:** CFA facilitates the development of innovative financial structures to mobilize investments, ensuring that enterprises and financial institutions can participate effectively in carbon markets. By working alongside diverse funds specializing in climate, sustainability, and environmental finance, CFA engages investors and financial institutions interested in the carbon market to identify investment opportunities and structure financing deals. Investors, banks, and specialized de-risking agencies are onboarded as partners, and their respective financial products and services are combined to enable better deal structuring and investment transactions. For example, CFA is currently structuring a combination of guarantee, price support, and debt-based transactions.



## Outcome

More standardized financial instruments and structures are now available, enabling well-prepared enterprises, project developers, and financiers to increase the number of transactions.

## Incentivize Innovation through competitive innovation challenges and support

- ▶ **Convening key stakeholders from clean cooking and adjacent sectors** into a “ThinkShop” to repurpose solutions for clean cooking carbon markets. This phase emphasizes collaborative exploration to identify opportunities that enhance the scalability and effectiveness of adjacent sector solutions for clean cooking initiatives. Insights gained are vital for refining the challenge’s focus, facilitating funding calls, and fostering strategic partnerships to advance the innovation challenge.
- ▶ **Launching open innovation competitions** to source potential deals begins with gathering Expressions of Interest to evaluate market demand, followed by explanatory webinars and sessions. This streamlined process prepares participants to develop proposals that meet the Innovation Challenge Facility's clean cooking carbon market challenges.
- ▶ **Incubating innovations** involves an in-person bootcamp designed to offer intensive project design support through mentorship and networking, nurturing promising business models and innovations. The bootcamp helps participants develop an acceleration plan, prepare pitch decks, and present to an independent jury. The most promising business model wins a prize and advances to the next phase.
- ▶ **Accelerating innovations** involves a 6 to 9 months process designed to maximize the potential of participating enterprises by providing tailor-made technical assistance to refine prototypes and validate business models for real-world application. This phase also emphasizes continuous networking support to enhance market visibility and foster early adoption and investment. The most promising business model is recognized and transitioned to the next phase of scaling up.
- ▶ **Scaling innovation** involves a 18-36 months process designed to evaluate the commercial viability of innovations, moving beyond the focused use-case testing of the acceleration phase. This phase integrates innovations directly with clean cooking companies, aiming for widespread organizational adoption and reducing reliance on project-specific applications. It prioritizes blended risk-reward financing over technical assistance to boost scalability and sustainability. This phase rigorously tests business models and technologies to ensure they meet market demands and can be seamlessly integrated into existing systems for broader sector implementation.

## Outcome

Disruptive products, innovative business models, and cross-sector collaborations are fundamentally transforming the economics of clean cooking markets.



# Initiatives and Exploratory Pilots



- ▶ Responsible Carbon Finance for Clean Cooking Initiative
- ▶ Financing Partnership Platform
- ▶ Carbon Price Support Mechanism
- ▶ Clean Cooking Carbon Finance Incubator
- ▶ Digital MRV and Finance Integration
- ▶ Digital MRV Innovation

# Responsible Carbon Finance for Clean Cooking Initiative





# Responsible Carbon Finance for Clean Cooking Initiative

## Enhancing confidence and demand in clean cooking carbon markets

- 1 Leading the industry adoption of Responsible Carbon Finance Principles and Codes of Conduct:** Codifying the actions for carbon project developers to take on their journey for continual improvement in generating quality credits.
- 2 Leading the industry convergence on the the Clean Cooking and Climate Consortium (4C) Technical Project Standards:** Creating the first methodology that can be used for any household cooking energy transition.
- 3 Securing buyer and investor commitments:** working with buyers to encourage their purchasing actions to drive a race to the top, where project developers are incentivized to generate high quality credits with substantiated sustainable development benefits.



# The Workings of the Responsible Carbon Finance Principles

Increasing buyer, government and household confidence in clean cooking carbon projects by implementing values on integrity, transparency, fairness and sustainability.

**Why we do it:** The quality of clean cooking carbon credits is currently under scrutiny. Carbon credit buyers depend upon the reputational benefits that engaging in carbon markets offers to them, but if the perceived risks outweigh the perceived benefits, investors and buyers will step back.

**What we are doing:** In 2024, Responsible Carbon Finance Initiative will finalize the principles and develop a code of conduct for project developers, with implementation guidelines, to support operationalize the principles, and continue a path towards improvement.

**What we will learn:** We are testing the hypothesis that project developers who integrate transparency and ethical practices into their policies will not only boost their reputation and increase demand for their clean cooking carbon credits but also encourage buyers to make reciprocal commitments like advance market purchases or paying premium prices. These actions are expected to incentivize ethical practices, attract investors by offering clearer risk mitigation, and enhance reputational benefits.

**What's next:** CCA is looking to enlist commitments from the CEOs project developers in piloting the voluntary Code of Conduct. CCA also seeks to embed Responsible Carbon Finance Initiative into a wider set of relevant initiatives in the wider carbon ecosystem, particularly with buyers, governments, and standards.

1

**CCA established four working groups in early 2023** with more than 530 individuals signing up, representing project developers, investors, financiers, carbon standards, market facilitators, and carbon credit buyers.

3

**The Principles then underwent public consultation** between 28 November 2023 to 31 January 2024. Feedback was received from a wide range of relevant stakeholders including project developers, research institutions, investors, carbon credit buyers

2

**Principles were developed through a multi-stakeholder process** with working group feedback complemented by 25 expert interviews, desk-based research, and several surveys.

4

**The Principles were endorsed for release by a newly established Advisory Council** consisting of 15 members with senior-level networks within, and deep experience of: clean cooking, carbon markets, or international finance.



# Financing Partnership Platform



# Financing Partnership Platform

The Financing Partnership Platform (FPP) is a coalition of partners that matches capital to clean cooking carbon projects.

## 1 Empowering growing carbon project developers:

Equipping developers with skills and resources to efficiently manage projects and meet financier expectations.

## 2 Demonstrating Viable transactions:

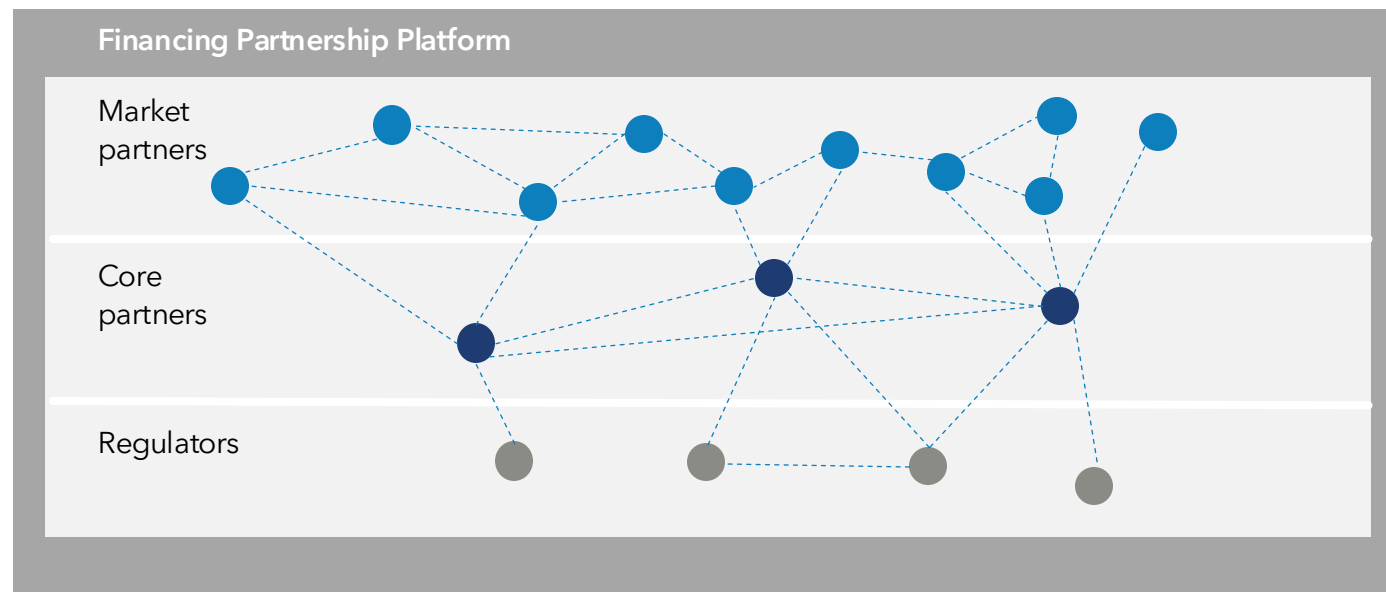
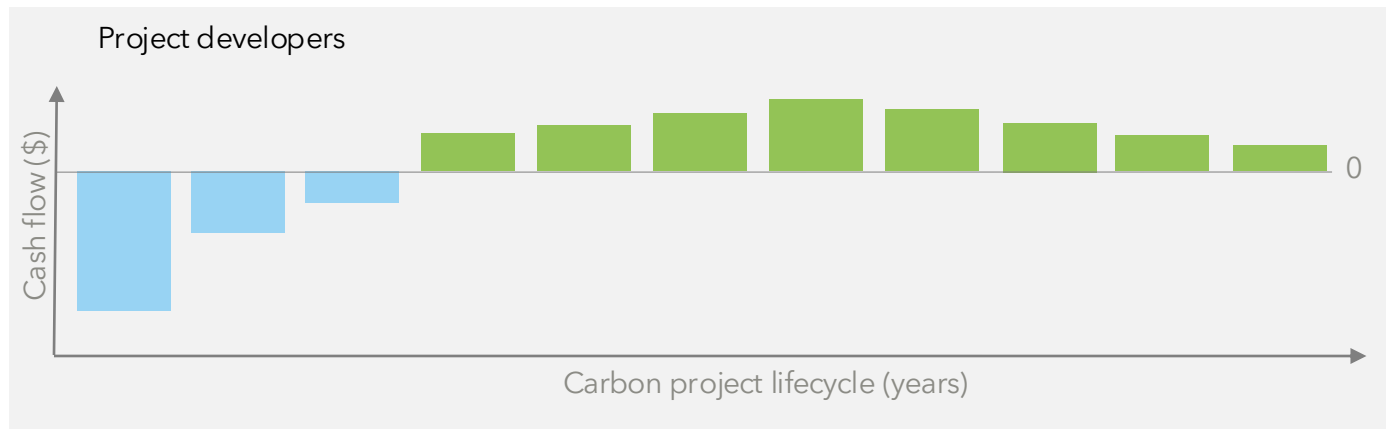
Establishing deal structures and undertaking transactions, as entry-points to demonstrate the business case and scale through adaptation.

## 3 Pooling Capabilities:

Building a coalition of willing banks, investors, risk-transfer agencies, project developers and pooling in their products and services to facilitate de-risking and meeting risk-return expectations on transactions.

## 4 Capacity building of banks:

Enhancing the ability of banks to evaluate and integrate carbon project financing into lending strategy and process.



# The Workings of the FPP

## Demonstrating viable transactions through a \$1 million structured deal for a biogas carbon project in Kenya

**Why we do it:** A clean cooking biogas company had registered a carbon project and already completed 6,000 biodigester units. They have an agreement for credit verification and sales on an annual basis. However, by 2023 they had only realized a fraction of their expected carbon revenues. The company's challenge was that they did not have the cash flow and capacity to expand and undertake more installations. This is because the cash flow generated by their carbon project was too far in the future. Data collection, audit, field visits, reporting, verification to issuance to sales and revenue realization from carbon credits ranges from 9-12 months.

**What we are doing:** The FPP partnered with a local bank, and an investor to structure a financing deal for the company. The FPP is providing the financial de-risking, brokering and TA support required to close the deal.

**What we will learn:** Banks de-risking requirements and business process changes to project finance SMEs against future carbon receivables and negative cash flows

**What's next:** Banks looking at various relationship/transaction opportunities with the SMEs beyond a single carbon receivable project financing

**1 The company requested a \$1M line of credit in local currency** to finance working capital and capex requirements that in effect means benefiting an additional ~2,000 households per year, reducing 18,000 tCO<sub>2</sub>e emissions/year.

**3 The FPP identified a bank partner** processing the financing request and an investor interested with sub-ordination role to participate in the transaction.

**5 FPP is providing capacity building** to the bank, including assistance to understand and assess the project risks distinctive to clean cooking carbon projects, and identify risk-mitigation strategies and instruments.

**2 The FPP identified potential risks and mitigation measures.** Undertook preparatory assessment of risk and development of potential risk-mitigation measures in advance of discussions with banks

**4 The FPP is de-risking** This consists of a 75% guarantee from the African Guarantee Fund and possible price support for the remaining 25%.



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# Clean Cooking Carbon Price Support Mechanism



# Clean Cooking Carbon Price Support Mechanism

The Mechanism uses an adapted contract for difference (CFD) instrument to provide price stability, catalyze investment from traditional sources of finance and set a more level playing for high quality projects

A CFD is a financial instrument that offers a safeguard against market volatility, thereby instilling investor confidence. The United Kingdom and Canadian governments have used CFD instruments as a mechanism to offer price stability to instill investor confidence in the economic viability of renewable energy projects. CFDs in the renewable energy sector offer price stability for producers by guaranteeing a certain price for their output.

CFDs can be applied in a similar manner to provide price stability for clean cooking carbon credit projects. A CFD could make investment in cookstove carbon projects more attractive and financially viable by reducing the risk associated with fluctuating carbon credit prices. By setting a fixed price or a minimum price for carbon credits generated from these high-quality projects, it would create a clear market signal and a financial motive for reducing emissions through clean cooking.

## Key points

- 1 A CFD for clean cooking projects would be an agreement between a cookstove carbon project developer, an investor or an intermediary, and a CFD facility administrator.
- 2 Instead of trading carbon credits, the CFD contract would set a contract price to adjust for differences between the actual sales price achieved and the agreed-upon price.
- 3 Initially, projects will be selected through a direct approach during a proof-of-concept phase, but selection through reverse auction is envisioned at scale to ensure the selection of the best bids in terms of quality and price.



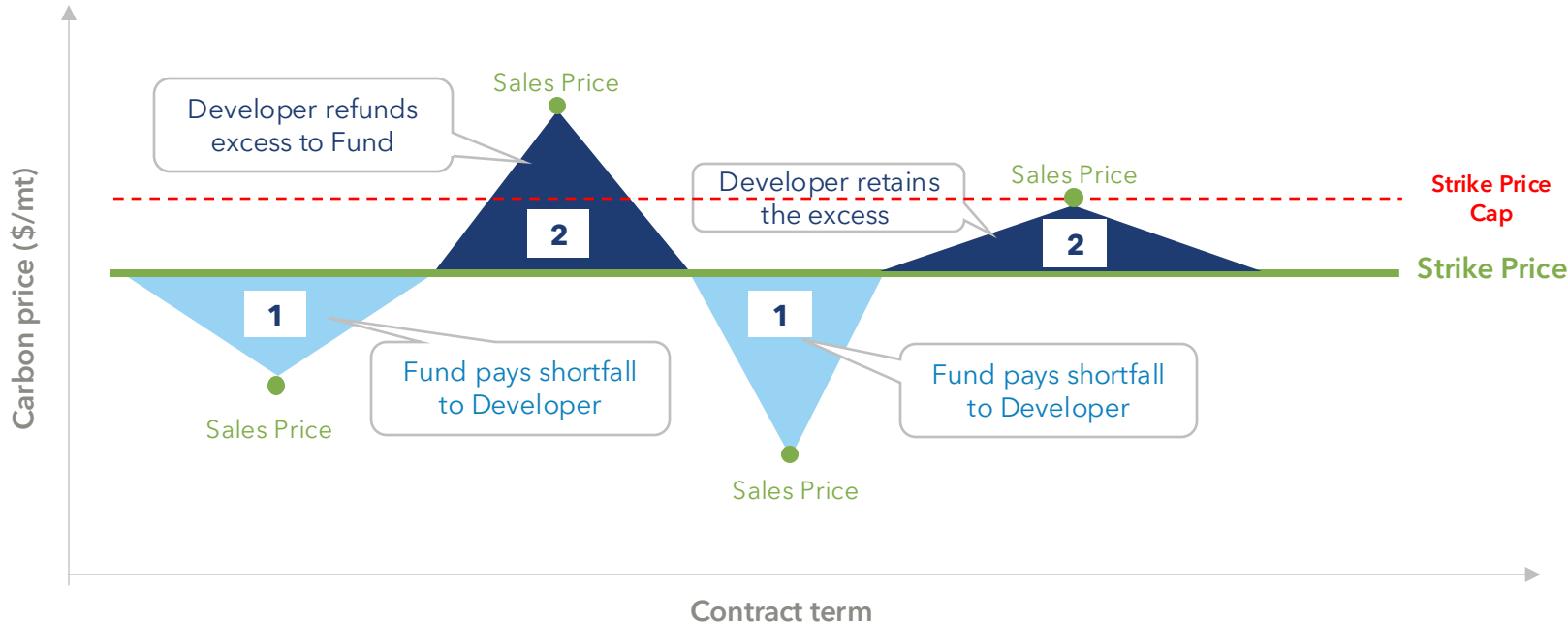
# The Workings of the CFD Mechanism

- 1 When the guaranteed price (Strike Price) is higher than the sales price (Sales Price), the facility pays the difference to the project developer.
- 2 When the project developer sells carbon credits at a Sales Price higher than the Strike Price, it retains the upside up to a certain price then the facility recoups excesses beyond a certain price from the project developer.

Notes:

- The Strike Price is the set price per carbon credit agreed in the CFD up to which level the mechanism will adjust for differences from the actual Sales Price.
- The Sales Price is the actual price at which the carbon credit will be sold in the market and can be a spot or forward price.

- ▶ The final iteration of the proposed mechanism aims to ensure risk-sharing with project developers by offering a partial subsidy.
- ▶ Recoupment would include a catch-up mechanism that balances interests of value-for-money for the facility/donors and upside returns for project developers.
- ▶ During the initial phase, the concept would be tested on a full subsidy basis and potentially without opportunity for recoupment over a short testing phase.





# Clean Cooking Carbon Finance Incubator



# Carbon Finance Incubator

To tackle enterprise level challenges towards increasing the origination and supply of quality carbon credits, the CFA has developed a programme to support early-stage clean cooking companies to understand and participate in the carbon markets.

**1 Enhance carbon market understanding** amongst clean cooking enterprises in Africa, supporting technical capacity building for companies to develop new projects or knowledgeably participate in existing carbon project structures

**3 Increase the visibility of clean cooking enterprises** and emerging project developers to country-level carbon programs and global carbon markets and buyers.

**2 Accelerate development of a pipeline of enterprises** that have long-term capacity to design, implement and participate in carbon projects and increase the supply of clean cooking carbon credits

**4 Diversify the pool of clean cooking enterprises participating in the carbon markets** with particular focus on empowering local entrepreneurs



# The Workings of the Carbon Finance Incubator

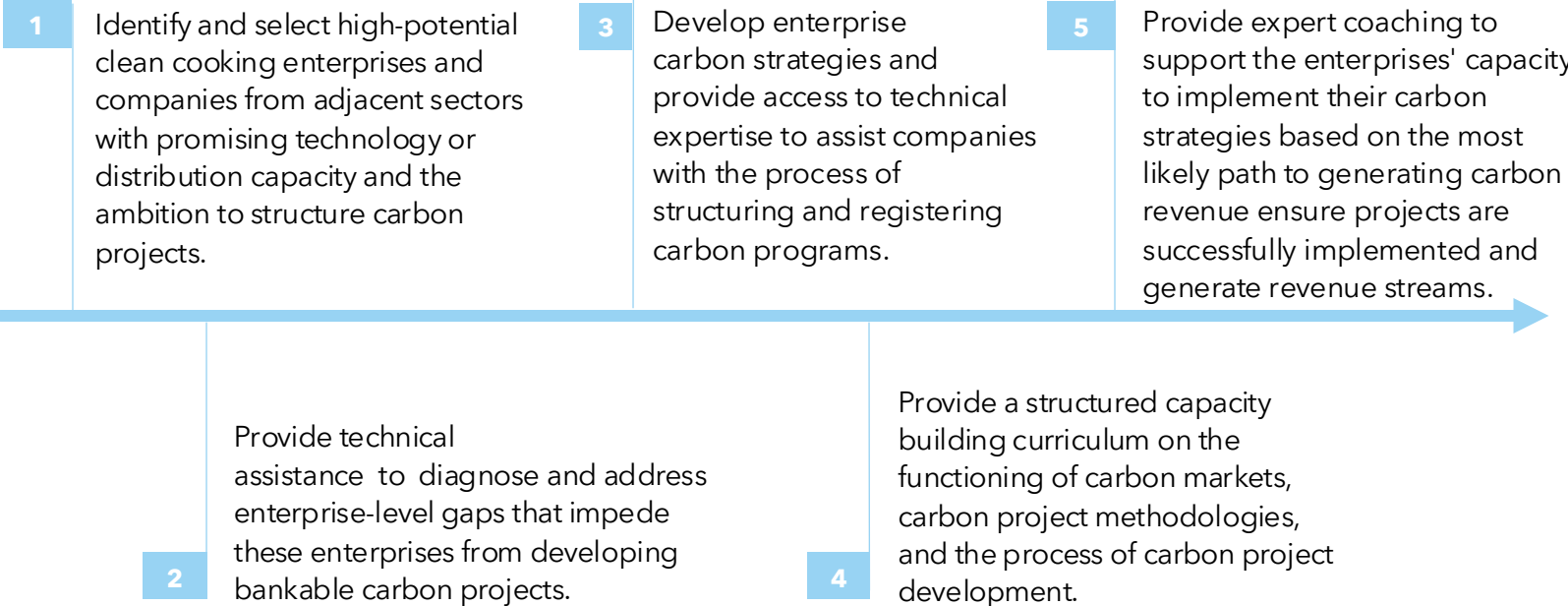
Supporting small and growing clean cooking enterprises to access carbon finance opportunities through a cohort-based capacity building program

**Why we do it:** Even as global carbon markets have accelerated through the growth in VCMs and the emergence of Article 6.2 bilateral agreements, the opportunity to deliver climate finance to the clean cooking sector through the carbon markets remains underutilized. Several supply side challenges need to be overcome to accelerate the mobilization of carbon capital to the clean cooking sector. Key issues include limited project development activity that limits supply of clean cooking carbon credits, high reliance on intermediaries to facilitate transactions with end-buyers of credits, and limited financing available to de-risk initial stages of project development.

**What we are doing:** building the capacity of clean cooking companies to attract carbon finance, including widening opportunities for small- and medium-sized clean cooking companies to attract carbon financing commitments or participate in existing carbon finance programs, while reducing investment risks for pre-financiers and carbon buyers.

**What we will learn:** how effective structured technical assistance and coaching are in capacitating smaller clean cooking companies for carbon project development or participation; if and how aggregation structures can play a role in increasing participation of smaller companies in the carbon project value chain.

**What's next:** 8 companies in West Africa selected for cohort 1. Cohort 2 set for East Africa launching in Q3 2024.



# Digital Innovation Challenge Window



# Digital Innovation Challenge Window

The Digital Innovation Challenge is the first competition from the Innovation Challenge Facility.

The Digital Innovation Challenge focused on leveraging the power of the digital economy to create opportunities for increasing the pace and volume of investment flows into clean cooking projects. It sought to explore opportunities in three areas:

**1** Reducing the time, effort, and operational costs of data management (including collecting, processing, analyzing, verifying, and storing transactional data) between clean cooking companies and financing opportunities.

**2** Improve transparency and accuracy of data across the clean cooking supply chain including financial decision-making, enabling better comparison of products and business model performance.

**3** Demonstrate the business case for clean cooking as a viable market for diversified types of results based, carbon and climate financing in addition to impact investment through strengthening impact data flowing from the sector.

## Solutions supported

**1** **Low-cost device or hardware that can improve data collection and monitoring.**

By leveraging precise monitoring of stove usage and carbon emissions, clean cooking companies can enhance the value of their carbon credits. This detailed data allows them to command premium prices in the carbon credit market, reflecting the verifiable impact of their sustainable practices.

**2** **Software solutions that improves business processes.**

Access to high-quality, real-time data on customers and key business performance indicators significantly enhances both revenue growth and cost efficiency. This strategic insight allows companies to make informed decisions swiftly, optimizing operations and boosting overall business performance.

**3** **Digital platforms/ marketplaces for carbon credits.**

Streamlining the trading process offers enhanced efficiency and transparency for buyers. These platforms also provide opportunities for clean cooking enterprises to aggregate their projects, improving their market presence and access to potential buyers.



# Digital Innovation Challenge Solutions



**Why we do it:** Climate Solutions has been developing a suite of sensor dedicated to Clean Cooking impact assessment since 2013. To date, they sold more than 10,000 sensors in 25+ countries.

With the push to digitalize the cookstove carbon market, the need for very affordable sensors that can “digitize” any stove type arose. Climate Solutions had a clear path to get there but needed support to grow their team, scale manufacturing and streamline their data collection solution.

**What we are doing:** The Challenge has provided TA and support to build an Android app, a cloud platform and to test them through a pilot in Kenya with Burn Manufacturing.

**What we will learn:** Validate their integrated solutions from the field to the cloud (hardware, software and cooking event detection algorithm).

**What's next:** Investment to scale manufacturing and build integration on the hardware side with stove manufacturers and on the software side with digital carbon platforms.

**1 Application:** Climate Solutions applied to the challenge with a proposal for low-cost sensors (less than 5US\$) that can monitor any stove throughout their lifetime.

**3 Pilot in Kenya with Burn Manufacturing:** test the Android app, cloud platform, and sensor algorithm.

**5 Scale Up:** Set up the processes for mass manufacturing of the sensors. Grow Climate Solutions Engineering team to build integration with all major stakeholders in the sector.

**2 Technical Assistance:** Develop an Android App and cloud platform to streamline the data collection.

**4 Market response and innovation adaptation:** key market players are responding by adapting and integrating the Climate Solutions software and hardware into their systems (e.g. Upya, C Quest, Burn Manufacturing).



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# Digital Innovation Challenge Solutions



**Why we do it:** Project developers are seeking digital solutions to help them manage distribution data, perform verification and monetise credits.

There is no software specially designed for project developers.

This means project developers need to invest significant amounts to build in-house solutions that have limited performance.

By creating a solution used across developers, this reduces costs for any individual developer, while enabling external integrations with standard bodies and buyers to reduce issuance time and enhance credit premium.

**What we are doing:** Conducting a pilot project with Biolite with their project in Kenya. collect feedback from usage and demonstrate commercial case.

**What we will learn:** Whether our digital software can improve the management of carbon project data and reduce issuance times and increase buyer demand.

**What's next:** Achieve wide scale adoption across clean cooking project developers and integrate our system with standard bodies to streamline credit issuance.

1

**CCA provided grant funding** for CarbonHQ to develop a digitized credit inventory management system.

3

**Technical assistance project # 2** saw CarbonHQ work with an AI consultancy to develop a tool to extract technical parameters from project documents leveraging LLMs.

5

**CCA will continue to support CarbonHQ** through the scale-up phase as they drive adoption with project developers, and form partnerships across the carbon project value chain.

2

**Technical assistance project #1** saw CarbonHQ work with a carbon consultancy to produce a customer journey map for clean cooking project developers.

4

**CarbonHQ is now starting pilot projects** with leading clean cooking project developers in Africa and Southeast Asia.



# Partnership





# Partnering for Impact



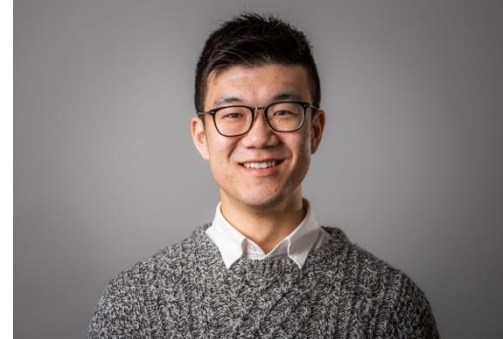
"The Financing Partnership platform brings together the capacity building of banks and clean cooking companies, resulting in expansion of market for lending to clean cooking companies that helps financial institutions of their ESG priorities and investments towards climate action.."

**Franck Adjagba**  
**Group Director of Business Development, African Guarantee Fund**



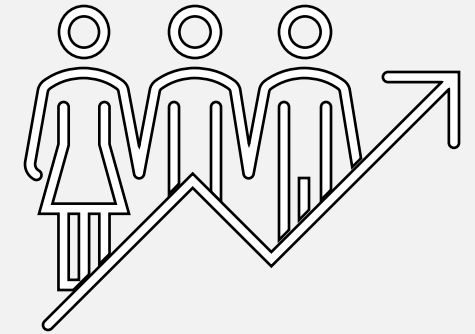
"(The Carbon Finance Incubator) program has clarified the complexities of carbon financing for me... the technical coaching has assisted me in establishing essential organizational structures that were previously lacking and hindering Roshan's scale. Additionally, the program has equipped me with the ability to negotiate better terms when collaborating with carbon project developers or investors in my business."

**Happy Amos**  
**CEO, Roshan Renewables**



"The Digital Innovation platform has played a crucial role in our pre-seed round. CCA and UNCDF validated the problem we're addressing through the program, and winning the Digital Innovation Challenge further affirmed our potential. Our product has evolved significantly through the Acceleration phase of the program, and we're well-positioned to deliver our solution to project developers during the Scale-up phase, vastly improving industry efficiency."

**Allen Fan**  
**CEO, CarbonHQ**



**The CFA aims to bring together our partner's several distinctive capabilities to help fill the financing gap needed to initiate and scale up clean cooking carbon projects.**

Read what our partners have to say about our work.

# CFA Structure

## Team Structure and Partners

### Program Director

Responsibilities: Set strategy and vision, communication, develop high-level partnerships, engage with off-takers such as investors.

Profile: Institutional economist, innovative and blended finance, financial sector development

### Core Program Team

Director, Financing Partnership Platform  
Senior Manager, Private Sector & Investment  
Senior Portfolio Manager, Venture Programs  
Program Associate

Responsibilities: Recruit partners and mentors, develop content and implement the accelerator programs.

Profile: Technical, with experience in finance, energy access, venture initiatives and programs.

### Extended Delivery Partners

Responsibilities: Implementation of the accelerator programs.

Profile: Industry experience and proven track record in delivering similar work.

### Strategic Partners

Responsibilities: Collaboration and strategy on program development.

Profile: Reputable and established industry players with wide reach.

# CFA Core Program Team



Senior Director,  
Innovative Finance  
**FEISAL HUSSAIN**



Senior Program Associate,  
Catalytic Finance Accelerator  
**CATHERINE TARAYIA**



Director,  
Financing Partnership Platform  
**RAJEEV GUPTA**



Senior Manager,  
Private Sector & Development  
**RONAN FERGUSON**



Senior Portfolio Manager,  
Venture Programs  
**SIMBA MUDIMBU**

# Extended Delivery Partners

**Aril Consulting**



# Strategic Partners



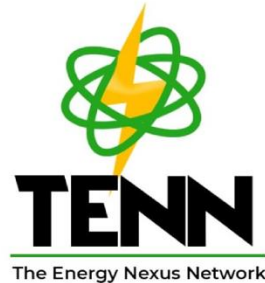
# Execution Partners



# Advisory Council and Working Group Members



Government of the Netherlands



# CFA Funders



Ministry of Foreign Affairs of the Netherlands

**APA**  
Corporation

**ZG**  
Foundation





# Get In Touch

For more information or partnership opportunities, contact us:

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- ▶ **Website**    [www.cleancooking.org](http://www.cleancooking.org)

AN INITIATIVE OF:

