

# INNOVATION PACKAGE AND SCALING READINESS REPORT



## COOLBOKS OFF-GRID REFRIGERATION SOLUTION IN NIGERIA

June 2024  
1st Edition

### Innovation

**Koolboks** operates as a provider of innovative solar-powered off-grid and eco-friendly refrigeration solutions, primarily targeting underserved areas in sub-Saharan Africa with the biggest market in Nigeria. The ice-based storage technology reduces food waste, preserves vaccines, and empowers communities with affordable and sustainable cooling solutions. This product is deployed to support daily food systems operations in Fragile and Conflict Affected (FCA) settings in Nigeria by prolonging the shelf life of frozen foods, fruits, vegetables and beverages.

### Scaling Ambition

By 2029, **Koolboks**, with the support of partners could reach **5% of the population in FCM** areas in **Northeast Nigeria** with **eco-friendly, solar powered refrigeration** technology. Koolboks aims for a possible reduction of up to 50% in breakdown incidents of the Kool Home Freezers through integration of the novel IoT monitoring system. Significant reductions in the rate of food loss will increase the economic prospects of target communities.

### SCALING READINESS METRICS

Scaling Readiness Score

7

Scalability Potential Score

This innovation is expected to contribute to the following impacts

#### CGIAR Impact Areas and Collective

1. Poverty Reduction, Livelihoods, and Jobs
2. Climate Adaptation and Mitigation
3. Environmental Health and Biodiversity
4. Nutrition and food security

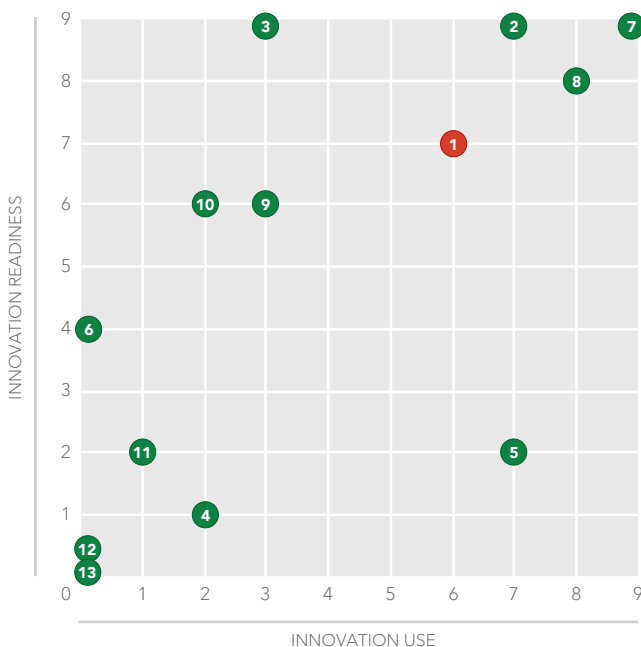
#### TOP SCALING BOTTLENECKS IDENTIFIED

1. Affordability
2. Awareness
3. User confidence

#### SDGs and SDG Targets

- SDG 1 | No poverty
- SDG 2 | Zero Hunger
- SDG 9 | Industry, Innovation and Infrastructure
- SDG 11 | Sustainable Cities and Communities

### SCALING READINESS GRAPH



INNOVATION PACKAGE

- 1 Koolbox
- 2 Technical support (hotline online)
- 3 Personalized payment plan
- 4 Community endorsements
- 5 Info packages
- 6 IoT troubleshooting
- 7 Food, beverages and drugs storage for healthy consumption
- 8 User friendly product design
- 9 (Inclusive) payment manual
- 10 Upskilling FCM technicians
- 11 Kool FCM partnership
- 12 Theft prevention device
- 13 Showroom



## INNOVATION PACKAGE DETAILS

The Innovation Package and Scaling Readiness (IPSR) workshop is aimed at designing an innovation package capable of achieving the Koolbox scaling ambition. The IPSR workshop participants addressed the barriers of poverty/affordability, awareness, technical capacity, gender and social inclusion, user confidence and trust, legal conditions and governance. Participants proposed respective enablers such as cooperative structures to facilitate affordability through personalized payment plans, the use of designated customer care representatives, product champions, attractive payment/business model, and gender sensitivity in scaling the innovation.

An overview of the core innovation and key enablers that were described as needed to achieve the scaling ambition, is presented below.

<b>Core Innovation / Enabler</b>	<b>Name</b>	<b>Description</b>
1 Core	Koolboks Freezers	An eco-friendly off-grid refrigeration with solar-powered systems, empowering communities with affordable and sustainable cooling solutions for resilient food systems and nutrition.
2 Enabler	Access to Finance	Market and/or community based cooperative structures to facilitate financing solutions through a personalized payment plan (PPP) model led by the Adamawa State Agribusiness Support Programme (ADASP).
3 Enabler	Product promotion and education	Use of product jingles in vernacular in local media, flyers, door-to-door awareness and promotional campaign targeted at relevant user segments.
4 Enabler	Flexible business model	Using the pay-as-you-go (PAYG) model makes the products affordable and accessible, resonating with customers at the grassroots.
5 Enabler	Early adopters and product champions	Targeting entrepreneurs that show motivation and demonstrate financial capacity as early adopters and designated product promoters among potential users in the environment.
6 Enabler	Capacity and/or technical knowhow for users	A step-by-step guidance on how to operate and maintain the refrigeration system increases confidence and trust in the product.
7 Enabler	Customer support hotline for trouble shooting	A telephone number to call, and available agent speaking the local language, providing prompt support for users of the solar powered freezers equipped with IoT component.
8 Enabler	Business structure, information packages, product demonstration space	Physical presence of the innovator with the full paraphernalia of office and business activities will improve and ensure users' confidence and trust.
9 Enabler	Gender Equality & Social Inclusion	Gender sensitivity is very key to doing business in FCM areas, particularly Northern Nigeria.
10 Enabler	Stakeholder coordination	Effective scaling partnerships with people (Building a strong team), productivity (Optimizing processes and systems) & profitability (Focusing on growth and revenue).



## CONTRIBUTING CGIAR INITIATIVE AND PARTNERS

### CGIAR LEAD INITIATIVE

Fragility, Conflict and Migration (FCM) Initiative

### PARTNERS INVOLVED

Koolboks  
World Food Program - Innovation Accelerator  
International Institute of Tropical Agriculture (IITA)  
International Water Management Institute (IWMI)

### CONTRIBUTING BILATERAL PROJECTS

### TYPE OF PARTNERS

Private sector  
UN-Agency  
CGIAR Centre  
CGIAR Centre



## DETAILED SCALING READINESS GRAPH AND METRICS

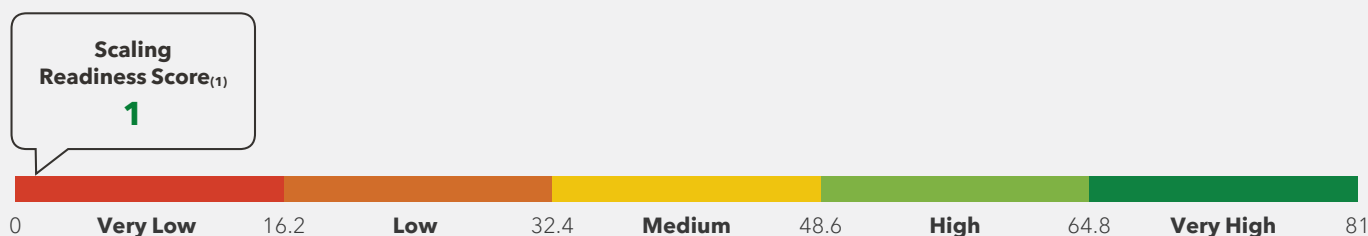
Each of the elements of the Innovation Package have been assessed for their innovation readiness and innovation use.

Level	Innovation Readiness	Innovation Use
0	The innovation is at idea stage	The innovation is not used
1	The innovation's basic principles are being researched for their ability to achieve a specific impact	The innovation is used by the organization(s) leading the innovation development
2	The innovation's key concepts are being formulated or designed	The innovation is used by some partners involved in the initial innovation development
3	The innovation's key concepts have been validated for their ability to achieve a specific impact	The innovation is commonly used by partners involved in the initial innovation development
4	The innovation is being tested for its ability to achieve a specific impact under fully controlled conditions	The innovation is used by some organizations connected to partners involved in the initial innovation development
5	The innovation is validated for its ability to achieve a specific impact under fully controlled conditions	The innovation is commonly used by organizations connected to partners involved in the initial innovation development
6	The innovation is being tested for its ability to achieve a specific impact under semi-controlled conditions	The innovation is used by organizations not connected to partners involved in the initial innovation development
7	The innovation is validated for its ability to achieve a specific impact under semi-controlled conditions	The innovation is commonly used by organizations not connected to partners involved in the initial innovation development
8	The innovation is being tested for its ability to achieve a specific impact under uncontrolled conditions	The innovation is used by some end-users or beneficiaries who were not involved in the initial innovation development
9	The innovation is validated for its ability to achieve a specific impact under uncontrolled conditions	The innovation is commonly used by end-users or beneficiaries who were not involved in the initial innovation development

More information on Innovation Readiness and Innovation Use can be found at [www.scalingreadiness.org](http://www.scalingreadiness.org).

#	Innovation/Enabler Name	Innovation Readiness	Evidence #	Innovation Use	Evidence #
1	Koolboks/ Koolhome	7	<a href="https://web.facebook.com/koolboksng/videos/1617414488991293/">https://web.facebook.com/koolboksng/videos/1617414488991293/</a>	6	<a href="https://www.facebook.com/watch/?v=935507385042606">https://www.facebook.com/watch/?v=935507385042606</a>
2	Access to Finance	6	<a href="https://www.adasprogramme.com/">https://www.adasprogramme.com/</a>	3	
3	Product promotion and education	7	<a href="https://web.facebook.com/koolboksng/videos/1115307819595406/">https://web.facebook.com/koolboksng/videos/1115307819595406/</a>	7	<a href="https://web.facebook.com/koolboksng/videos/1137558024015949/">https://web.facebook.com/koolboksng/videos/1137558024015949/</a>
4	Flexible business model	9	<a href="https://web.facebook.com/koolboksng/videos/1115307819595406/">https://web.facebook.com/koolboksng/videos/1115307819595406/</a>	3	
5	Early adopters and Product champions	9	<a href="https://web.facebook.com/koolboksng/videos/3816660768578221/">https://web.facebook.com/koolboksng/videos/3816660768578221/</a>	9	<a href="https://web.facebook.com/koolboksng/videos/483510521030353/">https://web.facebook.com/koolboksng/videos/483510521030353/</a>
6	Capacity and/or technical knowhow for users	6	<a href="https://web.facebook.com/koolboksng/videos/1115307819595406/">https://web.facebook.com/koolboksng/videos/1115307819595406/</a>	2	
7	Customer support Hotline for trouble shooting	9	<a href="https://www.koolboksnigeria.com/">https://www.koolboksnigeria.com/</a>	7	<a href="https://www.koolboksnigeria.com/">https://www.koolboksnigeria.com/</a>
8	Business structure and product demonstration site/showroom	0		0	
9	Gender Equality & Social Inclusion	9	<a href="https://web.facebook.com/koolboksng/videos/1628697871211455/">https://web.facebook.com/koolboksng/videos/1628697871211455/</a>	9	
10	Stakeholder coordination	1		2	

## SCALING READINESS METRICS



(1) Scaling Readiness score is based on the lowest scoring innovation

(2) Scalability potential score is based on the average readiness and use of all package elements



## SCALING OPPORTUNITIES AND BOTTLENECKS

The table below shows the transition between barriers and proffered solutions.

	BARRIERS	SOLUTIONS
Awareness	<ul style="list-style-type: none"> <li>Potential clients are not sure of the product efficiency</li> <li>Lack of information for the users/customers</li> <li>Fear of the unknown due to low level of literacy</li> <li>No information about solar freezers</li> </ul>	<ul style="list-style-type: none"> <li>Product education</li> <li>Designated customer care representatives</li> </ul>
Confidence/ trust	<ul style="list-style-type: none"> <li>Security</li> <li>Durability</li> <li>Fear of logistics</li> <li>Lack of customer confidence due to newness of product</li> </ul>	<ul style="list-style-type: none"> <li>Simpler design</li> </ul>
Availability	<ul style="list-style-type: none"> <li>Lack of operational presence in FCM areas and hard-to-reach areas</li> <li>Innovation support team not in the northeast</li> </ul>	<ul style="list-style-type: none"> <li>Agents in hard-to-reach areas</li> </ul>
Access to finance - affordability	<ul style="list-style-type: none"> <li>Overall cost of purchase is intimidating for users</li> <li>Fear of defaulting repayments</li> <li>Financial capacity to pay the down payment</li> <li>High delivery cost</li> </ul>	<ul style="list-style-type: none"> <li>Installment payment</li> <li>Manual that explain installment for specific users</li> <li>ROI calculator for users</li> <li>Cooling as a service</li> <li>Flexible payment plan</li> <li>Close customer relation</li> <li>Higher down payment</li> <li>Low interest rate</li> <li>Have viable products with guarantor on investment</li> </ul>
Compatibility	<ul style="list-style-type: none"> <li>Lack of information about grid supply voltage</li> <li>Solution not properly sized the choice of product</li> </ul>	<ul style="list-style-type: none"> <li>Automatic changing from grid to solar</li> <li>Solved</li> </ul>
Capacity - knowhow	<ul style="list-style-type: none"> <li>Customers do not know how to use products technically</li> </ul>	<ul style="list-style-type: none"> <li>One to one technician in the region</li> <li>Regula visits</li> <li>Customer support line</li> <li>Upscaling technician in the FCM areas</li> <li>IoT for trouble shooting</li> </ul>
Gender equality and social inclusion	<ul style="list-style-type: none"> <li>Concerns about the system being too technical for women</li> <li>Many FCM area store owners are men.</li> <li>Most women associations are not legally registered.</li> </ul>	<ul style="list-style-type: none"> <li>Training</li> <li>Strengthening women associations</li> </ul>
Legal conditions and governance	<ul style="list-style-type: none"> <li>Lack of guarantors</li> <li>Government influence</li> </ul>	<ul style="list-style-type: none"> <li>Support through subsidy of products</li> </ul>
Stakeholder coordination and scaling partnerships	<ul style="list-style-type: none"> <li>Lack of reliable structure for coordination and support</li> <li>Coordinated access to government programs</li> </ul>	<ul style="list-style-type: none"> <li>Support through process with partners</li> <li>Partners organization for ease of doing business</li> </ul>



## ACKNOWLEDGMENT

We would like to thank all Funders who support this innovation through their contributions to the **CGIAR Trust Fund** (<https://www.cgiar.org/funders/>).

The information for this Innovation Packaging and Scaling Readiness (IPSR) report was generated during the workshop that took place in Lagos, Nigeria on 27 & 28 June 2024. This Report was prepared by Shakiru Quadri, Sini Luwa, Mirja Michalscheck, and Josey Kamanda based on guidance from CGIAR's Portfolio Performance Unit (PPU). The authors thank Koolboks and all workshop participants and the CGIAR Innovation Packaging and Scaling Readiness (IPSR) team for their valuable contributions.

For enquiries on the Koolboks Freezers, please visit <https://www.koolboks.com/>

For general queries related to the Innovation Packaging and Scaling Readiness (IPSR) reports and processes, please contact [performanceandresults@cgiar.org](mailto:performanceandresults@cgiar.org).



## MORE INFORMATION

### Reference Material

- CGIAR MELCOP Glossary including key Innovation and scaling concepts and definitions: [https://drive.google.com/file/d/1v0O5wt4z3bgs\\_wCYa7H2FifTVSAXAVjl/view](https://drive.google.com/file/d/1v0O5wt4z3bgs_wCYa7H2FifTVSAXAVjl/view)
- Scaling readiness website: [www.scalingreadiness.org](http://www.scalingreadiness.org)
- Innovation Readiness levels: [IPSR Infographic Innovation Readiness](#)
- Innovation Use levels: [IPSR Infographic Innovation Use](#)
- IITA website: [www.iita.org](http://www.iita.org)
- FCM website: [www.cgiar.org/initiative/fragility-conflict-and-migration](http://www.cgiar.org/initiative/fragility-conflict-and-migration)



## EXPERTS ANNEX

The following experts contributed to the Innovation Packaging and Scaling Readiness (IPSR) workshop and assessments.

S/N	Name	Designation	Organization	Gender
1	Dr. Mirja Michalscheck	Post-Doctoral Researcher - Innovation Scaling	IWMI	♀
2	Mr. Quadri Shakiru	Technical Advisor (FCM - WP4)	IITA	♂
3	Ms. Zehui Qui	Innovation Accelerator Consultant	UN WFP	♀
4	Ms. Asia Sultan	Bootcamp Design Consultant	UN-WFP	♀
5	Mr. Olorunfemi Adedeji	Communication Manager	IITA	♂
6	Ms. Lolade ALONGE	Business Communication/ Project Manager Global	KOOLBOKS	♀
7	Mr. Sini Luwa	Business Development Officer	IITA	♂
8	Mr. Babatunde OGUNSEYE	Project Manager	KOOLBOKS	♂
9	Ms. Yemisi OLAGBEMIRO	Marketing Manager	KOOLBOKS	♀
10	Mr. Akeem Azeez	IoT Engr.	KOOLBOKS	♂
11	Mr. Raphael	Project Manager	KOOLBOKS	♂
12	Mr. Yunusa Gafai	MD/Lead Consultant	ADASP	♂
13	Mr. Collins Visomenso Samaila	CEO	HADASSAH Ltd	♂
14	Mr. Mubarak Aminu	Cofounder	Aqualife I-farm	♂
15	Mr. Bosun Jegede	IT Officer	KOOLBOKS	♂



Team of experts and stakeholders at the IPSR Workshop, Lagos Nigeria. June 2024.

### About Stability-and-Peace Accelerator

The Stability-and-Peace Accelerator is a joint activity by the World Food Programme (WFP) Innovation Accelerator and the International Water Management Institute (IWMI), a CGIAR Research Center. Leveraging the combined expertise and resources of the WFP Innovation Accelerator and CGIAR, this program supports private-sector innovators in scaling climate-smart solutions across food, land, and water systems in fragile and conflict-affected communities in Africa, and the Middle East. It is part of the CGIAR Initiative on Fragility, Conflict, and Migration (FCM).

The Stability-and-Peace Accelerator selected four innovations that can significantly enhance the resilience of communities in Fragile and Conflict Affected (FCA) settings. The selected innovations align with prioritized themes based on market demand and are expected to create tangible and scalable impacts toward achieving the Sustainable Development Goals SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 5 (Gender Equality), SDG 13 (Climate Action), and SDG 17 (Partnerships for the Goals). The accelerator provides financial, technical, and business support, along with investment readiness coaching and marketing skills.

### CGIAR Initiative on Fragility, Conflict and Migration

The CGIAR Initiative on Fragility, Conflict, and Migration, also known as FCM, addresses challenges to livelihood, food, and climate security faced by some of the most vulnerable populations worldwide. The Initiative focuses on building climate resilience, promoting gender equity, and fostering social inclusion. [Fragility, Conflict, and Migration - CGIAR](#)

**Disclaimer:** This publication has been prepared as an output of the CGIAR Initiative on Fragility, Conflict and Migration and has not been independently peer-reviewed. Responsibility for editing, proofreading, and layout, opinions expressed, and any possible errors lies with the authors and not the institutions involved.

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