



**Solar-powered cold storage for developing countries**  
designed to greatly reduce post-harvest loss for 470 million  
small farmers in Africa, Latin America, and Southeast Asia

# INTRODUCTION

## Nnaemeka Ikegwuonu

- Farmer, Radio Presenter, Social entrepreneur;
- Founder & Executive Director, Smallholders Foundation Ltd./Gte (2003 - 2015)
- Founder/CEO – ColdHubs (2015)

Ashoka Fellow (2008)

Rolex Laureate (2010)

Fast Company Most Creative in Business (2012)

Nigeria's Young Person of the Year (2011)

Niigata International Food Prize Laureate (2012)

Yara Prize for Green Revolution (2013)

Food Planet Prize (2021)





Smallholder  
Farmers  
Rural Radio Studio

**FARM 98.0FM**



# PROBLEM



**In Nigeria, 45% of food spoils due to lack of cold storage...**



**...this causes 93 million small farmers to lose 25% of their annual income.**

Source: Rockefeller Foundation; Food Waste and Spoilage Initiative 2014



Refrigeration can be used to extend shelf life but is non-existent in Nigerian farms clusters, aggregation centers and marketplaces.

**X** Most solutions are not rugged enough to withstand harsh conditions

**X** Power grids are not capable of delivering reliable energy

**X** Most equipment is too costly for the average farmer to purchase



# SOLUTION

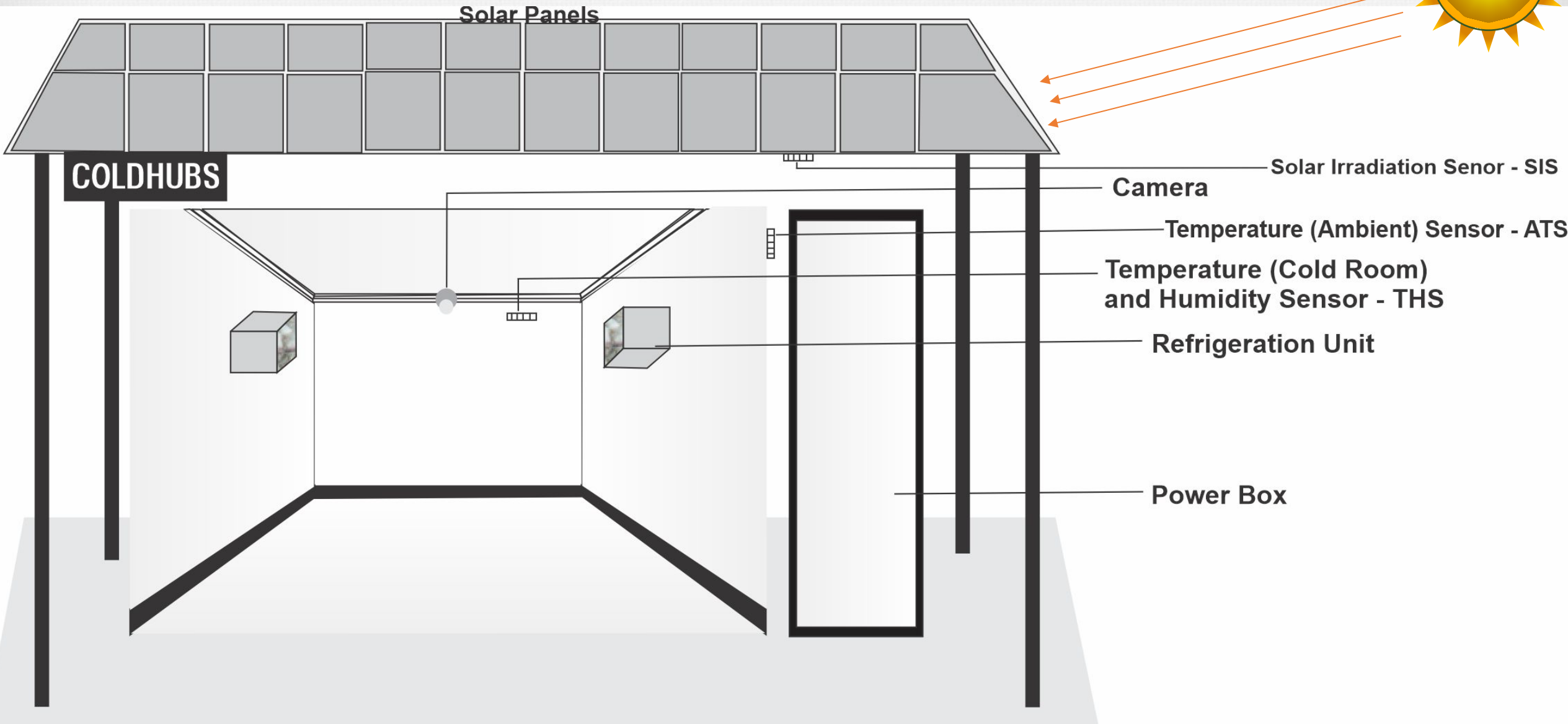
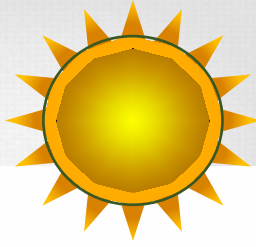


In 2015, we launched ColdHubs; 100% solar-powered walk-in cold stations for 24/7 storage and preservation.



Well designed for specific locations, weather conditions. R290 Refrigerant.

# ColdHubs Advanced Remote Monitoring System



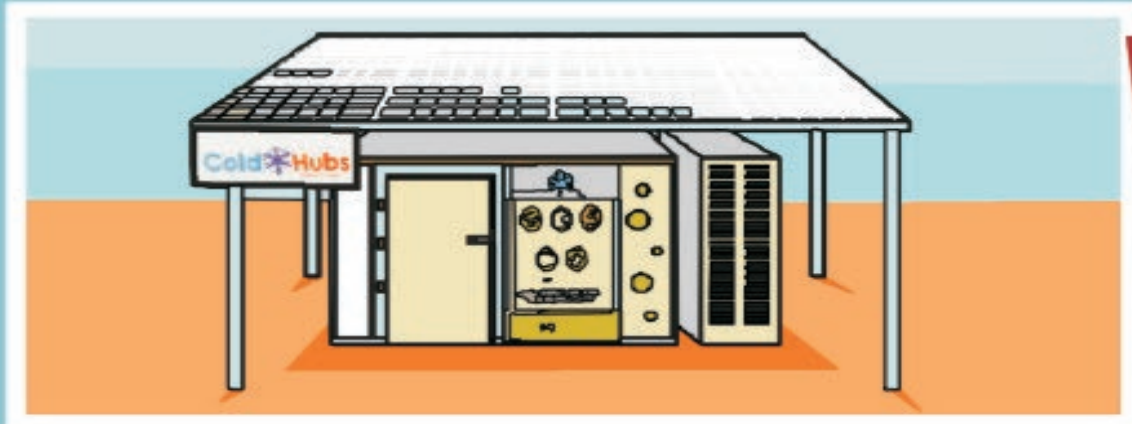
**COLDHUBS (OPEN/INTERIOR)**



Cold\*Hubs

**POSTHARVEST  
EDUCATIONAL  
MANAGEMENT (PHM)**

**COMIC**



**Educational Comic for  
PostHarvest  
Management Programme**

BY SMALLHOLDERS FOUNDATION & COLDHUBS

**Offers education for post harvest management to onboard users**



Participants trained over 3 to 5 days

# POST HARVEST MANAGEMENT EDUCATIONAL TRAINING PROGRAM

## DAILY ATTENDANCE AND TRANSPORT ALLOWANCE SIGNATURE SHEET FOR PARTICIPANTS

DATE: 27/01/2021

S/NO	NAME	PHONE NUMBER	AMOUNT	SIGN	DATE
1	Abiyu Mohammed Anwal	08066151538	1500 ✓		27/01/2021 ✓
2	Saminu Bello	07026515395	✓		✓
3	Adamu Maing				
4	AKH Usa Ali	07034735123			✓
5	Mohammed Yusuf	08138147117		IBF	
6	Abuba Garba (AKMA)	08030677378			
7	Hudu Adu Bababe	07067435080			
8	Mohammed Balq Garba	080276112447	"	Hu	
9	Umaru Muhammed Ahasan	08038856193			✓
10	Sale Mohammed	08138446088			
11	MuSuf Sulaman	0806884135			
12	Abdullahi Umaru	08030643027	✓		
13	Abmstapha Mohammed	08038957033			
14	MuSuf Abdul Hamdy Maing	08135092029			✓
15	Adamu Mohammed	08100650719	✓		
16	Ubinu Musu	07035242721			
17	AKH Lawan Bello	08065692163			
18	Yusuf Abdulkali	08068998457	✓		✓
19	Salisu Musu	08067851767			
20	Anwaly Garba (Sanku Gwan)	07030614991	✓		✓
21	Muntari Haruna	08161324532			
22	Musa Abdulkali	0806505547			✓

21/01/2021  
 Joye Saife  
 KASUWA Gwani



Participants are certified



**Extends the shelf life of perishable food from 2 days to 21.**



**Dedicated cold storages for meat.**



**Dedicated cold storages for fish and other seafood.**



**Dedicated cold storages for milk.**



Solar powered ice block production



**1ton of Ice Blocks, produced per day.**



**Each Ice Block weighs 5kg sold for NGN500**



**IcePoints and ColdHubs co-located.**

# REVENUE MODEL



**We charge up to NGN200/night to store 1 plastic 20kg crate of produce  
NGN500/night for meat & fish storage  
5kg Ice Block/NGN500**

# OPERATIONS

Cold Hubs

SERVICE CHARGE LIST

A crate of tomato	N 50
Soft drinks	N 50
	N 50
	N 50
	N 25



VEGETABLES



FRUIT



MILK



FISH



MEAT

SOLAR POWERED COLD STORAGE  
COUNTRIES

Lady Hub Operator (HO) and Lady Market Attendant per ColdHub.



HO receives and records goods for customers.



Completes Customers Storage Card for each customer.

# 10 YEARS IMPACT OF 58 HUBS



**13.8m kgs of  
fruits and  
vegetables  
saved  
from spoilage**



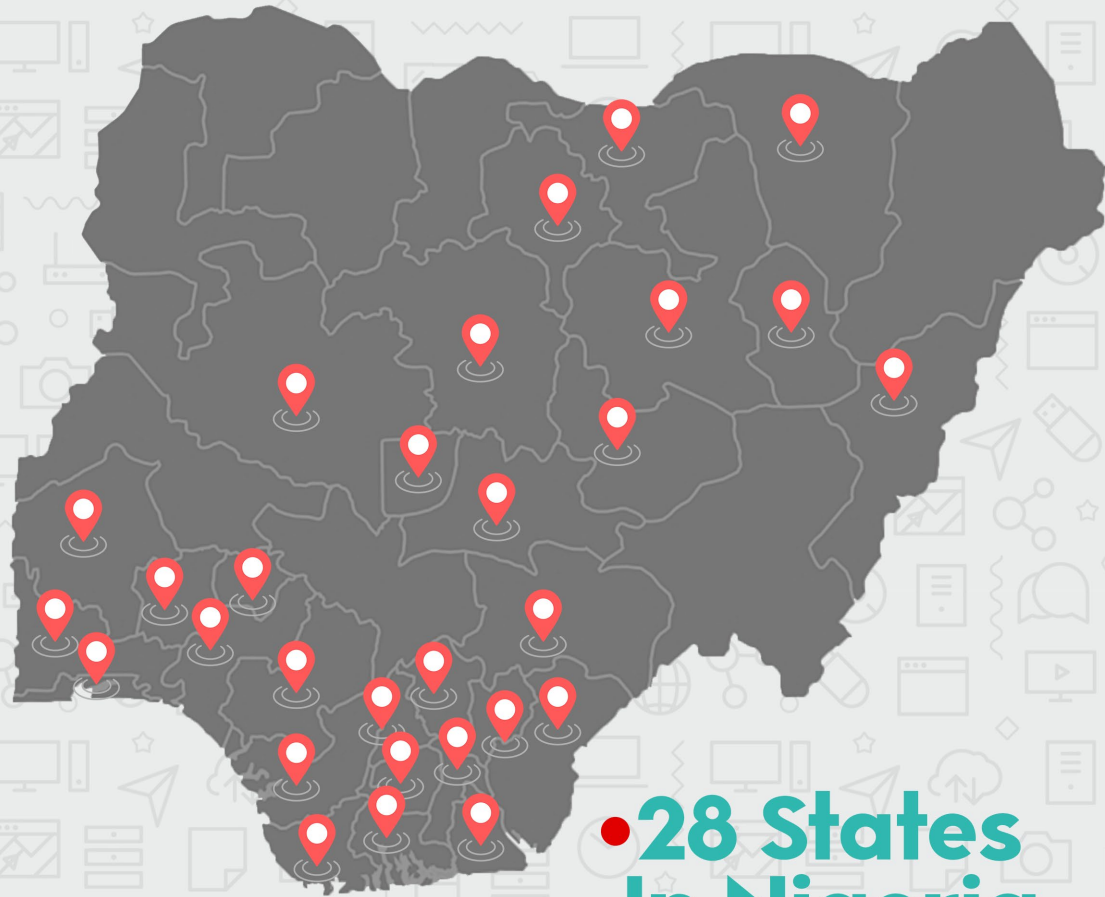
**11,100 farmers,  
retailers and  
wholesalers  
have increased  
their income to  
US \$120**



**100+ jobs created  
for women as Hub  
Operators and  
Market Attendants**



**3.9m kgs  
of CO2  
saved**



• **28 States  
In Nigeria**

**Abia, Abuja, Adamawa, Akwa-Ibom, Anambra  
Bauchi, Benue, Cross-River, Delta, Ebonyi, Edo  
Ekiti, Enugu, Gombe, Imo, Jigawa, Kano  
Kaduna, Lagos, Niger, Nasarawa, Ogun, Oyo  
Osun, Ondo, Plateau, Rivers, Yobe**

<b>International Pilots</b>
Sierra Leone
Kenya
United Arab Emirates



**100 tons ColdHubs (2 units)**

Farin Gada Market, Jos  
Dan Magaji Market, Zaria

**Cold Hubs**  
 Keeping it fresh!  
 Solar Powered Cold Rooms For Storage And Preservation of

Vegetable Fruit Milk Fish Meat

@coldhubs +2348023225373 +2349011461035 | info@coldhubs.com | www.coldhubs.com

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WITH KIND SUPPORT FROM

**HEIFER**  
 INTERNATIONAL

# LOGISTICS







Service Charge: NGN3,500/km.

# PACKAGING



Injection Mold Production of Reusable Plastic Crates

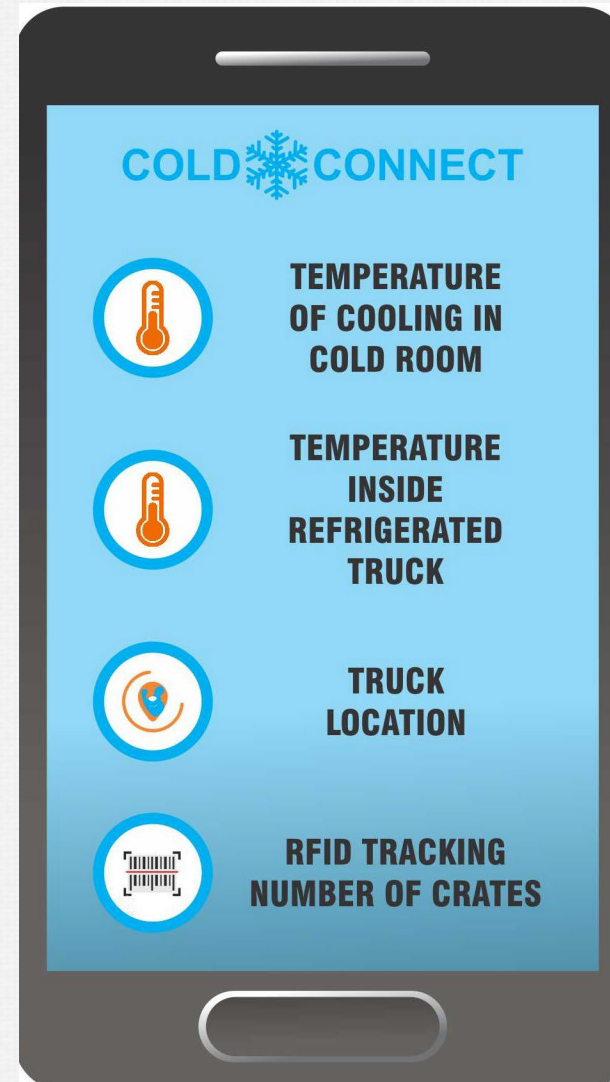


**Production/Sales Price: NGN7,000 per crate**

# FINANCIALS

	<b>2021 (US\$)</b>	<b>2022 (US\$)</b>	<b>2023 (US\$)</b>	<b>2024 (US\$)</b>
<b>Cold Rooms</b>	54	58	58	58
• <i>Total Crates Inventory</i>	8,100	8,700	9,700	15,800
• <i>%of Crates Used</i>	70%	60%	60%	60%
• <i>Rental Rates per Crate</i>	US\$0.26	US\$0.26	US\$0.12	US\$0.13
<b>IcePoints</b>	0	0	1	8
<b>Refrigerated Trucks</b>	0	0	2	10
<b>Crates Produced and Sold</b>	0	0	0	20,000
<b>Revenue</b>	<b>37,559</b>	<b>84,322</b>	<b>128,555</b>	<b>835,952</b>
Salaries	11,160	20,450	24,022	34,531
Direct, Operational and Other Costs	77,319	120,374	126,435	374,185
<b>Total Expenses</b>	<b>88,479</b>	<b>140,824</b>	<b>150,457</b>	<b>408,716</b>
<b>Net Income</b>	<b>(10,123)</b>	<b>5,188</b>	<b>14,484</b>	<b>223,246</b>

# ColdConnect App



# THE TEAM



# BOARD



**CJ Uzoho**  
**Commercial Manager Gas**  
**Aggregation Company of**  
**Nigeria**

energy economist, business development expert with extensively knowledgeable and experience in energy related transactions.

Masters in Energy Economics  
University of Dundee



**Osayuki Eguasa**  
**Financial Manager, All ON**  
**Energy Impact Investors**

economist with expertise in financial Planning / Forecasting , budgeting Budgetary Controls , Stakeholder Engagement and Corporate Finance.

BSc Accountancy,  
University of Benin, Nigeria



**David Ruben**  
**Advisory Board**

Consultant to The Rockefeller Foundation Food Initiative,

BSc in International Business (Copenhagen Business School), an LLM in Public International Law (Stockholm University), and an MSc in Foreign Service (Georgetown University).

## FUND RAISING

US\$2,500,000

Debt or Equity

# FUNDING UTILIZATION

1.	Procure 10 units, 20 tons refrigerated trucks.
2.	Commission 1 unit, 100tons ColdHubs at Mile 12 International Fruits and Vegetables Market Lagos.
3.	Produce 5 new crates molds and establish 2 Plastic Crates Washing Centers.  (Mile 12 Lagos; and Dan Magaji Market, Zaria)



# SIERRA LEONE PILOT

Installation and commissioning of 3 ColdHubs in:

- Waterloo Market, Freetown.
- Central Market, Kabala, Koinadugu District.
- Kenema Food Market



# GHANA PILOT

Installation and commissioning of 2 ColdHubs in:

- Juapong Central Market, North Tongu District, Volta Region.
- Kpone Fish Market, Volta Region.

**STARTUP  
DISCOVERY  
SCHOOL**

Shell Foundation | 



# KENYA PILOT

Installation and commissioning of 4 ColdHubs in:

- Nairobi, Mombasa, Meru and Kisumu Food Markets.

Procurement and operation of 2 units, 20 tons refrigerated trucks



# UAE PILOT

1	Demonstrate solar cold storage, to store and preserve, fresh produce, among rural communities of the UAE.
2	Deploy prototype 3tons ColdHubs for dates and palm storage in Fujairah, UAE.
3	Collect utilization rates data, which will be used to plan ColdHubs technology and business model scale in the UAE.
4	Use the UAE as the HQ for the Middle East and Asia Region expansion.

**HUB71**





World Food Programme



gain  
Global Alliance for Improved Nutrition



Swiss Re

FACTOR[e]  
VENTURES

AllON

Energy innovations.  
Powerful collaborations.



JAPAN GOV  
THE GOVERNMENT OF JAPAN



GLOBAL COLD CHAIN  
ALLIANCE®

ILK Dresden



Institut für Luft- und Kältetechnik  
gemeinnützige Gesellschaft mbH



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BOLD IDEAS WITH BIG IMPACT®



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Challenge

# Cold Hubs

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