Cold-Chain Initiatives in Africa: Context for Attendees of the March 15th Summit

Project Title	Location	Key Interventions	Project Leads
Africa Centre of Excellence for Sustainable Cooling and Cold-Chain (ACES)	HQ in Rwanda, affiliated spokes throughout Africa	Develop & widely deploy sustainable, market-viable cold chain solutions. Build skills/capacity, awareness, and investment.	Rwandan & UK Govts, Centre for Sustainable Cooling (CSC), UNEP United for Efficiency (U4E), University of Rwanda, industry
Cold Chain Challenge: Pre-Cooling (Planned)	Lesotho	As part of MCC's investment in irrigated horticulture under the Lesotho Compact II, support deployment of pre-cooling technology to reduce PHL and value destruction	Millennium Corporate Challenge (MCC)
Solar Powered Cold Storage for Orange Flesh Sweet Potato (2021-present)	Kenya	To set up a proof-of-concept of an economically viable, large-scale, solar-powered storage facility to supply quality orange-fleshed sweet potato to major fresh markets and processors in Kenya.	USDA FAS (Agricultural Economic Development), North Carolina State University, International Potato Center (CIP), Agri-Control Technologies, ECOZEN
CREdO: A Framework for Enhancing African Indigenous Vegetable Production for Improved Food Security, Nutrition, and Incomes Among Smallholder Farmers	Kenya	Development of the total value chain, from soil to markets through the integration of education, applied research, and extension; in partnership with local government, private sector, and rural communities	Kenyan Ministry of Agriculture, Livestock, Fisheries and Co-operatives NC State University
Solar Milk Transport	Kenya	Affordable milk chilling-on-transit system to transport	Savanna Circuit Tech Ltd
Kigali Cooling Efficiency project – Cool solutions to chilling prospects: piloting efficient cooling for sustainable seafood supply chains in East Africa	Kenya	Pilot the use of clean, efficient cold storage facilities through selected model Beach Management Units (BMUs) in coastal Kenya to showcase the untapped opportunity of off-grid cooling solutions and minimize post-harvest losses for improved income opportunities by fishers	WWF-Kenya
Cooling Facility	Kenya, Malawi	Cold chain market assessments as the basis for full GCF projects	World Bank and GCF with technical assistance from Carbon

			Trust and UNEP U4E on assessments
The Cool Move	Kenya and subsequently Sub-Saharan Africa	Increase high-quality (first-mile) cold-chain accessibility and use in rural areas in emerging markets in an economically viable way, combined with suitable finance solutions and investments	Rabobank
ARCH Cold Chain Solutions East Africa Fund	Kenya, Ethiopia, Uganda, Rwanda, Tanzania and potentially another country	The Fund aims to install a total warehouse capacity of around 100,000 pallets by building and operating around 8-10 facilities in Kenya, Ethiopia, Uganda, Rwanda, Tanzania and potentially another country.	ARCH Cold Chain Solutions Limited
Mozambique Expansion of Rural Cattle and Dairy Opportunities (MERCADO) (2016-2021)	Mozambique	This Food for Progress project to enhance the dairy value chain in Mozambique increased investment in cold chain to significantly reduce product losses. Increased storage capacity and equipment for locally sourced dairy by 45%. Helped entrepreneurs invest in equipment such as cooler boxes, trolleys, display fridges, bulk milk, cooling tanks, etc. Trained and built capacity of local dairy producers, co-ops, and producers on post-harvest handling. Improved raw milk prices and increased consumption of locally produced dairy so less dairy goes to waste.	USDA FAS (Food for Progress), implemented by Land O'Lakes Venture 37
Cochran Fellowship Program	Morocco, Algeria, Egypt, South Africa, Nigeria, Ethiopia	The Cochran Fellowship Program provides short-term training opportunities (2-3 weeks) to agricultural professionals from middle-income countries, emerging markets, and emerging democracies. USDA/FAS overseas posts identify priority topics in areas related to agricultural trade, agribusiness development, management, policy, and marketing. Past cold chain program countries listed here.	USDA/FAS (Fellowship Programs), WFLO, U.S. land grant universities
Global Cold Chain Improvement Initiative (1998-2010)	South Africa, Nigeria	Assisted South African grape exporters with pre-cooling technologies. Established national cold chain associations in South Africa and Nigeria. Supported Southern Africa regional cold chain conference in 2009.	USDA/FAS (AED, with EMP funding), Ingersoll-Rand, WFLO
ColdHubs	Nigeria	ColdHubs is a social enterprise that designs, builds, commissions and operates solar-powered walk-in cold rooms in farm clusters, produce aggregation centres and outdoor food markets. The initiative also created 66 new jobs for women, by	ColdHubs Limited

		recruiting and training them to work as hub operators and market managers in markets and farm clusters in 2020.	
Emerging Markets Program: Angola Cold Chain Assessment and Training (2015-2016)	Angola	Assessment of cold chain infrastructure and logistics. Training to support import handling and cold chain logistics for perishable foods. Study tour to South Africa.	USDA/FAS (EMP), WFLO, SIAM Professionals, USAPEEC, USMEF
Power Africa support to InspiraFarms, Solar Freeze, and others	Cameroon, Cote d'Ivoire, Ethiopia, Ghana, Kenya, Liberia, Niger, Rwanda, Senegal, Tanzania and Uganda	Technical assistance and access to finance advisors, working with an emerging cohort of off-grid cold chain companies in sub-Saharan Africa to help them grow and reach scale. Online productive use of energy (PUE) catalogues and market assessments, which include information on the cold chain technologies, companies and distributors available in various countries across east, west and central Africa.	USAID + 11 USG interagency partners, 170 private sector partners, 20 development partners
Regional Policy Harmonization for Efficient and Climate-Friendly Refrigerators	20 countries in East and Southern African regions	Market assessments, technical report and recommended MEPS and labelling for Efficient and Climate-Friendly Refrigerators	EACREEE, SACREEE, UNEP U4E, Lawrence Berkeley National Lab, Clean Cooling Collaborative, UK Gov, GEF
Solar Cold Storage and Processing in Rwanda	Rwanda	InspiraFarms commissioned 10 modular, solar-powered food processing and refrigerated storage facilities in six districts across four of the five provinces of Rwanda in 2018. Each facility includes cold storage, a processing area, an aggregation area, and administrative and hygiene spaces	Inspira Farms
Rwanda Cooling Initiative (R-COOL)	Rwanda	Financing for efficient, climate-friendly fridges and recycling of old ones	Rwanda Govt, UNEP U4E, BASE, local banks and vendors, Clean Cooling Collaborative
Business Drivers for Food Safety- BD4FS	Senegal, Nepal, Ethiopia (Rwanda-TBD)	Design & Implement “food safety situational analysis”, provide support in accessing affordable financial services, design and implement trainings , webinars, videos, manuals, technical learning briefs for growing food businesses in all aspects of food safety; postharvest sheds, transport logistics, storage, temperature control, processing, retail, etc.	Food Enterprise Solutions is the BD4FS project lead. BD4FS is funded by the Agency for International Development.

A solar-powered cold room to help fishing ports adapt to climate change	Dakar, Senegal	Commissioning a solar-powered cold room in the port of Fass Boye to store fish and testing its technical operation; Defining how the facility's governance and management will work to help enhance its use, supporting stakeholder buy-in and identifying impacts; Evaluating the added value of this equipment via user feedback and audits, to pursue roll-out at a larger scale.	FFEM (Fonds français pour l'Environnement mondial / French Facility for Global Environment)
ECOWAS Refrigerators and Air Conditioners Initiative (ECOFRIDGES)	Ghana and Senegal	Financing for efficient, climate-friendly fridges and recycling of old ones	Ghana and Senegal Govts, UNEP U4E, BASE, local banks and vendors, Clean Cooling Collaborative
Cold Chain Facilities Network (Feasibility Study)	Ghana	Feasibility Study inclusive of legal and regulatory assessment, cold chain market assessment, technical analysis, refrigerated engineering design and analysis, financial analysis and financing plan, preliminary environmental impact assessment, development impact assessment, US sources of supply, implementation plan, and investor outreach.	LixCap, FreezeLink, USTDA, World Food Logistics Organization/Global Cold Chain Alliance
Abating Greenhouse gas emissions from Obsolete RAC equipment in West Africa (AGORA) [in review process]	Ghana, Nigeria	Support 2 market-based rebate schemes that promote consumer adoption of more energy efficient refrigerators and air conditioners with low GWP refrigerants in Ghana and Nigeria	Governments of Ghana and Nigeria, UNDP, UNEP United for Efficiency (U4E), project under instruction for approval by the French fund FFEM.
National Cooling Action Plans	Ghana and Nigeria	Prepared 2 National Cooling Action Plans as well as complementary reports for early implementation activities	Governments of Ghana and Nigeria, UNDP, Clean Cooling Cooperative
CoolUp	Egypt (other 3 countries in the project are in West Asia)	Upscaling Sustainable Cooling in 4 countries: Egypt, Jordan, Lebanon, Turkey (Promoting Natural Refrigerants, and Energy Efficiency)	Lead is Guidehouse Germany. Funding for IKI programme. Global and Regional partners: Frankfurt School, ILK Dresden, Öko-Recherche, UNDP, RCREEE, IAU, IDG (Egypt), LCEC, RSS
Developing Resilient and Sustainable Agricultural	Ghana, Malawi	Develop crop production systems and build capacity in collaboration with shellers, warehouses, processors, seed suppliers, and dealers in a proactive	USAID

Systems for Transforming Production Patterns Associated with Climate Change		manner for a changing climate and integrate with infrastructure, markets, and processing facilities to produce a seamless value chain	NC State University
Cold Chain Rapid Response and Master Plan Strategy Development of the Master Plan for the Establishment of Service Chain and Temperature Controlled Logistics (TCL) Platform for the Storage of Perishable Products	Benin	With World Bank funding, the team conducted an assessment to identify the market potential for a commercially viable cold chain facility supervised by PACOFIDE, the Government of Benin's implementation unit The team delivered a concept design and tender documentation for multiple facilities, a roadmap to attract and catalyze sustainable TCL operations, and a comprehensive market assessment that provides analytics to quantify and prioritize opportunities to develop the facility. This assessment and roadmap have resulted in the procurement of a USD 3 Million Airport Cold Chain facility, under construction and the launch of a tender process for a 10 million USD conditioning facility in the Grand Nokoué wholesale market. This tender process directly follows the successful cold chain COVID-19 rapid response and strategy developed by the WFLO-LixCap consortium.	LixCap, WBG, XX of Benin, World Food Logistics Organization/Global Cold Chain Alliance
Developing a master plan to implement a service chain and logistics platform under controlled temperature in the Country of Burundi	Burundi	Master Plan with design build specifications and refrigeration equipment for the development of a temperature controlled facility.	LixCap, WBG, XX of Benin, World Food Logistics Organization/Global Cold Chain Alliance
Ethiopian Cold Chain Investment Analysis and Recommendations	Ethiopia	Assessment of private sector investment opportunities for TCL services in Ethiopia by evaluating existing and future supply and demand trends for food, pharmaceutical, and value-added services. Assessment sought to influence the design and implementation of a planned TCL facility, ensuring that it provides locally relevant solutions for long-term commercial viability. As of 2021, the ARCH Cold Chain Solutions fund announced a 62 million USD funding package for developing storage facilities at the Kilinto Industrial Park outside of Addis Ababa, the site recommended by WFLO and LixCap from this study.	WFLO, LixCap LLC
Investment Development and Creation of Food Logistics	Morocco	LixCap identified an opportunity to develop a new cold storage facility in the port of Tanger Med, created a special purpose vehicle for the investment, developed a customer base, handled bureaucratic requirements, secured a USAID Development Credit Authority credit guarantee for USD 7 million, and developed	DAI, LixCap LLC, WFLO

Warehouse, Friopuerto Tanger		a full business and financial model. LixCap contributed capital and attracted private investors from Spain, Morocco and the United States, carrying the project through to construction. Total investment volume reached USD 11 million. The facility, Friopuerto Tanger, has been in operation since 2016 and has generated a profit since 2019.	
An innovative solar-powered milk cooling solution for the higher efficiency of the dairy sub-sector in Tunisia	Tunisia	Solar-powered milk chiller to increase the quantity of milk sold from isolated farms.	International Center for Agricultural Research in the Dry Areas (ICARDA) and the National Agricultural Research Institute of Tunisia (INRAT)