



**GLOBAL COLD CHAIN**  
ALLIANCE®

**December 11, 2024**

**Strengthening the Cold Chain: Analysis &  
Recommendations for West Africa**

---

# Our Team



**Greg Laurin**  
President, Conestoga Cold Storage



**Nicholas Pedneault**  
CEO, Congebec



**Roudy Akiki**  
CCO Africa, CT-Technologies



**James Eason**  
GCCF Technical Expert



**Paul Matthew**  
Director, GCCA Africa



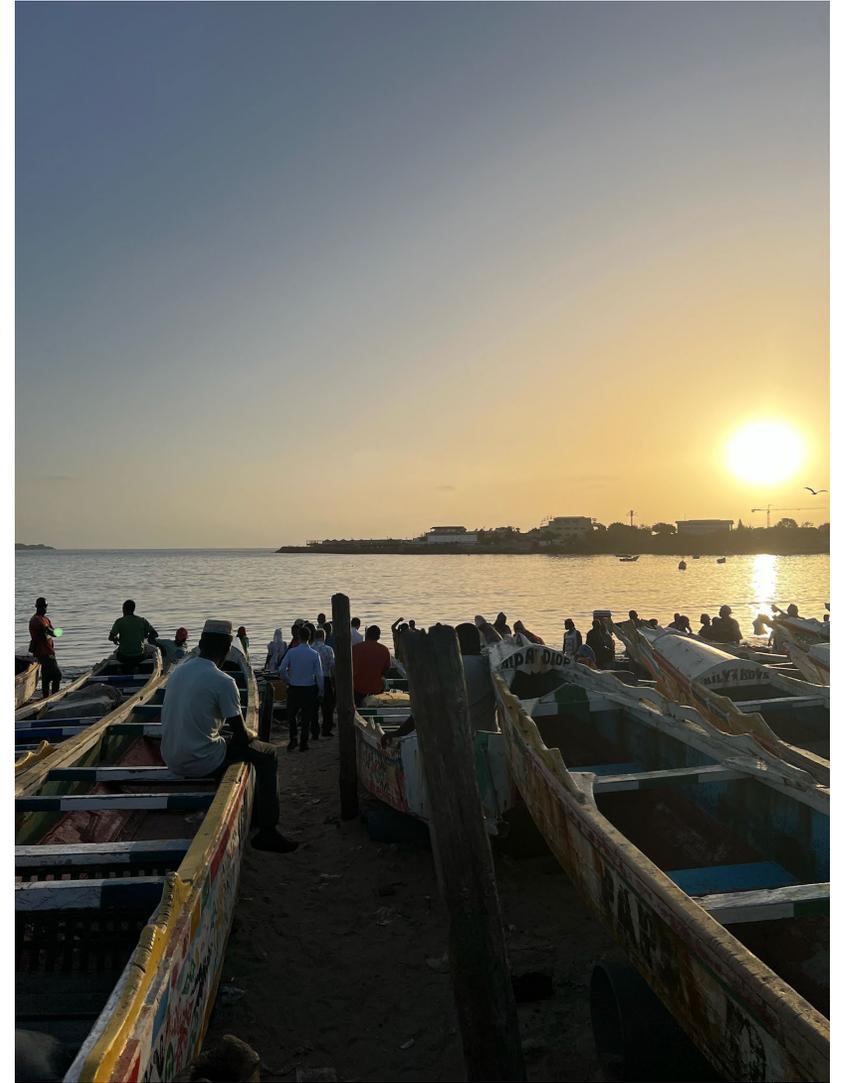
**Amanda Brondy**  
Vice President, International Projects



**Madison Jaco**  
Manager, International Projects

# Agenda

- About the project
- Cold chain overview in West Africa
- Challenges and opportunities
- Next steps with GCCF



# About the Project



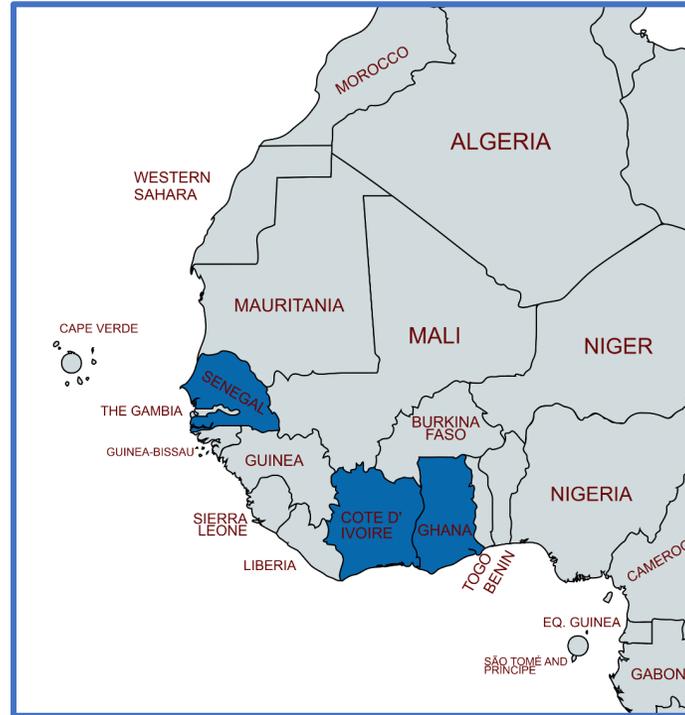
**Countries: Ivory Coast, Ghana, Senegal**

**Period: 2024 – 2025**

**Activities:**

- 1. Follow Up Assessment (Qualitative)**
- 2. Mentorship**
- 3. Educational Resources, Training, and On-Site Consultations**
- 4. Study Tour**

# About the Project



## Goals:

1. Increase capacity to store and handle perishable products
2. Improve food safety
3. Reduce food loss and waste

# Assessment

- 52 companies interviewed.
- 75% of companies are new stakeholders.
- 6 cities visited.
- 5 technical experts consulted.
- 4 local administrators engaged.



# Port & SEZ Infrastructure

# Airports

## Ghana

- Kotoka International Airport in Accra, Ghana
- Primarily passengers as there is minimal infrastructure to support handling or storage of perishable products
- Other key airports include Tamale, Takoradi, and Kumasi



## Ivory Coast

- Félix Houphouët-Boigny International Airport in Abidjan, Ivory Coast
- Handles both passengers and cargo
- Other key airports include Yamoussoukro and Bouaké

## Senegal

- Blaise Diagne International Airport (DSS) in Dakar, Senegal; replaced the older Léopold Sédar Senghor International Airport
- Both handle passengers and cargo, though the old airport is primarily cargo and military equipment
- Other key airports include Ziguinchor, Cap Skirring, and Kolda, all servicing tourist markets



# Seaports

## Ghana

- The Port of Tema is the largest port in Ghana and located 30 km outside of the capital city of Accra
- Hub of cold chain logistics providers in the country
- The Port of Takoradi is the second largest, primarily handling minerals and cocoa
- New development: Port of Keta



## Ivory Coast

- The Port of Abidjan is the largest port in West Africa
- Increasing capacity with new extensions
- Mixed feedback from stakeholders on port activity and efficiencies
- The Port of San Pedro is the second largest port in Ivory Coast, primarily handling the country's agricultural exports



## Senegal

- The Port of Dakar is the largest port in Senegal and located in the capital city
- Handles nearly 90% of the country's trade
- Congestion is a major issue at this port due to its location
- The port is relocating – new port will be about 30 km outside of the city



# Logistics Parks and Free Zones

## Ghana

- Ghana Free Zones are located in Accra, Tema, Kumasi, and Takoradi
- Monetary and non-monetary incentives
- Focus industries include Agro-processing, floriculture, pharmaceuticals, seafood processing

## Ivory Coast

- Zones Industrielles de Cote d'Ivoire (ZIC) are located in Abidjan, San Pedro, and Ferkessédougou
- Boasts ease of operations, need-based subsidies and infrastructure services, and network/market expansion
- Focus industries include Agro-processing, pharmaceuticals, logistics, and manufacturing

## Senegal

- 5 special economic zones: Diass, Diamniadio, Sandiara, Bargny-Sendou, and Bélé-Kidira
- Monetary and non-monetary incentives
- Focus industries include Agro/Food processing and logistics

# Transportation Infrastructure

# Transportation Infrastructure

## Ghana

- Road and rail is not well established or maintained, particularly outside of Accra
- Washed out roads can also cause delays for trucks
- Rough roads shorten the lifespan of refrigerated trucks
- Long travel time from Tema to other population hubs



## Ivory Coast

- Reportedly good road and rail infra with high connectivity between population centers
- Well developed between port and Burkina Faso and Mali



## Senegal

- Well developed road network between cities and from Dakar to Mauritania and Morocco
- Lacking rural road and rail infrastructure
- Government funding rail project to update existing rail infrastructure
- Congestion around the Dakar port is one of the greatest transportation challenges



# Transportation Operations

## Ghana

- Chilled and frozen product may be loaded into ambient trucks
- Poor infrastructure leads to long travel times or idle time in traffic or roadside
- Defrosting/temperature abuse is most common during transportation

## Ivory Coast

- Drivers may often turn off refrigeration to save on fuel costs
- Minimal temperature-controlled transportation from farm to collection centers
- No reported backhaul programs

## Senegal

- Drivers may often turn off refrigeration to save on fuel costs
- Minimal temperature-controlled transportation from farm to collection centers
- No reported backhaul programs

# Key Users of the Cold Chain

## Ghana

- Poultry
- Fish
- Onions & shallots
- Pharmaceuticals
- Modern grocery retail (Shoprite)

## Ivory Coast

- Fish / Seafood
- Horticulture, such as mangoes
- Pharmaceuticals
- Modern grocery retail (Auchan, Carrefour)

## Senegal

- Fish / Seafood
- Onions, potatoes, and garlic
- Fresh bananas
- Pharmaceuticals
- Modern grocery retail (Auchan, Carrefour)



*There are few true 3PLs in the region, so most producers, exporters/importers, grocery stores, and healthcare value chains have captive, in-house logistics to service their logistics needs.*

# Cold Chain Infrastructure & Operations

## Ghana

- Hub of cold warehouses around Tema and Takoradi ports
- Minimal near-farm cold chain
- Minimal temperature-controlled transportation
- Minimal racking or palletization of product
- Primarily Freon refrigeration systems
- Very few 3PLs operating in Ghana

## Ivory Coast

- Clusters of warehouses around population centers and near the Abidjan port, mostly for fish or import/export
- Cold chain is lacking for many horti-products
- Minimal near-farm cold chain
- Some temperature-controlled transportation, but lack of best practices
- Highly manual operations
- Primarily Freon systems with some newer Ammonia refrigeration
- More 3PLs than Ghana and Senegal, but don't make up a significant market share of all cold chain operations

## Senegal

- Clusters of warehouses around population centers and near the Dakar port, mostly for fish or import/export
- Cold chain is lacking for domestic production for domestic consumption
- Minimal near-farm cold chain
- Some temperature-controlled transportation, but lack of best practices
- Highly manual operations
- Primarily Freon systems
- Some large 3PL actors operating in/around Dakar

<p><b><u>Strengths</u></b></p> <ul style="list-style-type: none"> <li>• Advantageous geographic location for receiving US perishable products</li> <li>• Developed trade corridors with Europe and North America</li> <li>• Increasing imports of US perishable products since 2022</li> <li>• General political stability</li> <li>• Agriculture is the main economic driver</li> <li>• Member of the Economic Community of West African States (ECOWAS)</li> <li>• Presence of international brands – retail (Carrefour, Shoprite, Auchan) and fast-casual dining (Burger King, KFC)</li> <li>• Young and growing population</li> <li>• Increasing tourism and HORECA sectors</li> <li>• Relatively reliable energy and utilities</li> <li>• Free trade / special economic zones</li> </ul>	<p><b><u>Weaknesses</u></b></p> <ul style="list-style-type: none"> <li>• <b><i>Lack of cold chain knowledge</i></b></li> <li>• Lack of affordable finance for cold chain</li> <li>• Disaggregated, small producers lack cold chain collection centers to reach economies of scale</li> <li>• Traditional wet markets remain the primary retailer for individual consumers</li> <li>• Highly localized markets</li> <li>• Insufficient transportation infrastructure (road, rail)</li> <li>• Cumbersome customs clearance processes</li> <li>• Underdeveloped food processing centers</li> <li>• Slowed economic growth and poor FX rates post-COVID</li> <li>• Tariffs/bans on imports of some perishable products</li> <li>• Lack of domestic food safety regulations and certifications</li> <li>• Minimal tax incentives for cold chain equipment</li> </ul>
<p><b><u>Opportunities</u></b></p> <ul style="list-style-type: none"> <li>• <b><i>Incoming Africa Continental Free Trade Agreement</i></b></li> <li>• Expanding population and economies / growing middle class</li> <li>• Increasing public and private investments in port capacity and transportation infrastructure</li> <li>• Increasing donor and private equity investments for resilient, climate-smart agriculture</li> <li>• Recognizing cold chain as a sustainable development solution (FLW, nutrition, public health)</li> </ul>	<p><b><u>Threats</u></b></p> <ul style="list-style-type: none"> <li>• Failed cold chain investments deter funding opportunities for first movers in other locations</li> <li>• Perceived political and economic risk for foreign actors</li> <li>• Shifting public and private support for enabling cold chain development</li> <li>• Competitive environment may be too nascent to establish effective networking and information sharing</li> <li>• Increasingly severe weather events (droughts and flooding)</li> </ul>



# Recommendations

- **January 2025: Organize individual mentorship between local operators and international experts**
  - French and/or English
  - Monthly virtual meetings
  - Cold Chain Roadmap
  - Interested? Contact me at [mjaco@gcca.org](mailto:mjaco@gcca.org)
- April 2025: Implement networking events and cold chain training (in person and virtual)
- April 2025: Provide on-site cold chain consultations
- August 2025: Organize study tour to South Africa

# Recommendations

- January 2025: Organize individual mentorship between local operators and international experts
- April 2025: Implement networking events and cold chain training (in person and virtual)
  - Topics to include:
    - Business Case / Business Development for Third-Party Cold Chain Logistics
    - Food Safety and Certifications
    - Energy Management (Ghana)
    - Cold Storage Design and Technology Considerations (Ghana)
    - Warehouse Operations (Senegal and Ivory Coast)
    - Sanitary Transportation (Senegal and Ivory Coast)
    - HACCP/TACCP/VACCP
- April 2025: Provide on-site cold chain consultations
- August 2025: Organize study tour to South Africa

# Recommendations

- January 2025: Organize individual mentorship between local operators and international experts
- April 2025: Implement networking events and cold chain training (in person and virtual)
- **April 2025: Provide on-site cold chain consultations**
  - Trainers will do a “walk through” of local facilities
  - Offer feedback and considerations
  - Answer cold chain questions for individual companies
- August 2025: Organize study tour to South Africa

# Recommendations

- **January 2025: Organize individual mentorship between local operators and international experts**
- **April 2025: Implement networking events and cold chain training (in person and virtual)**
- **April 2025: Provide on-site cold chain consultations**
- **August 2025: Organize study tour to South Africa**
  - **Observe cold chain best practices**
  - **Meet with other operators**
  - **Draw comparisons between West and South Africa**
  - **Network with other cold chain operators in West Africa, as well as across the world**
  - **Attend GCCA's Africa Cold Chain Conference**

**Thank you for joining!**

**Please complete the post-webinar evaluation.  
We value your feedback!**

**For additional information, please contact  
Madison Jaco ([mjaco@gcca.org](mailto:mjaco@gcca.org)) or  
Amanda Brondy ([abrondy@gcca.org](mailto:abrondy@gcca.org)).**