

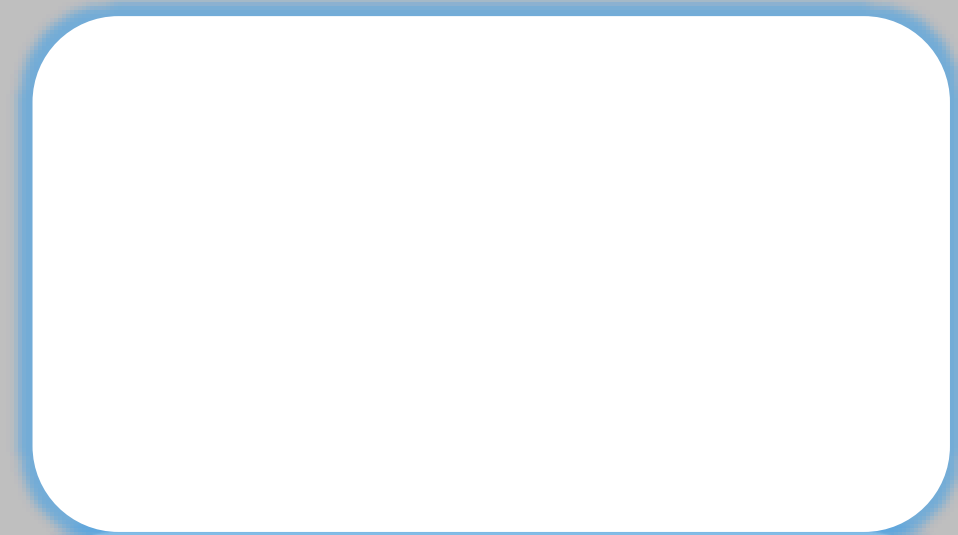


# Intermodal **AFRICA**

2021

## The Excessive Contribution of an Unbroken Cold Chain to a Healthier Community Life in Africa

Boaz Amiel  
Chief Executive Officer  
Overseas Commerce Ghana Ltd  
Tema, Greater Accra, Ghana



137,000

*A YEAR*

11,417

*A MONTH*

380

*A DAY*

*DEATHS*

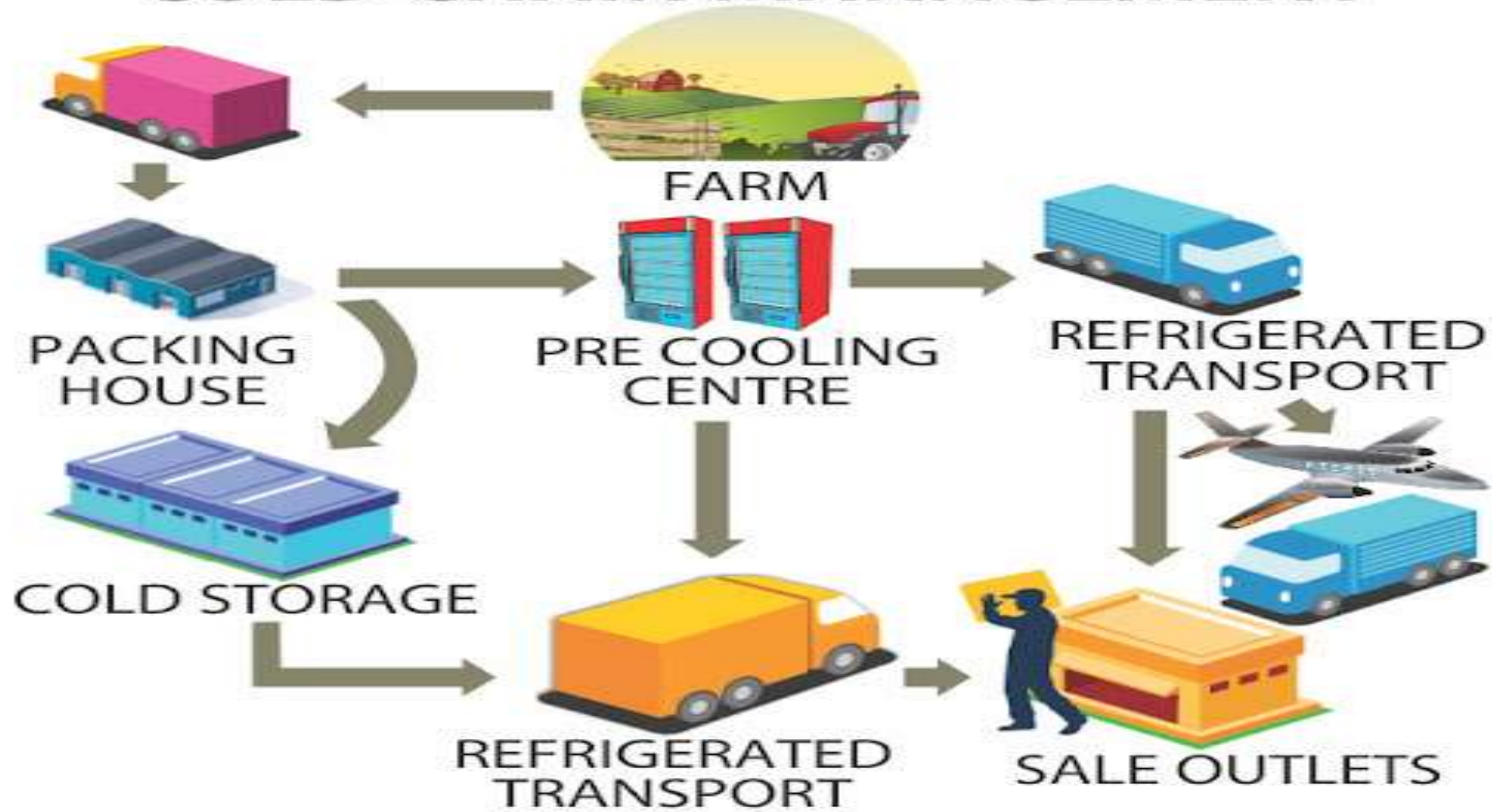
*From Foodborne diseases  
in the African Region*

# ***COLD CHAIN***

- **Maintaining temperature control during each and every phase of the product, from the collection of raw materials to consumption of the product by the end consumer.**
- **The cold chain of a product is considered to have been respected when it has been subjected to constant temperature control throughout the process that occurs from production of the product until its consumption.**
- **We refer to this process as a “CHAIN”, as it actually consists of several interrelated processes.**

# *COLD CHAIN*

## **COLD CHAIN MANAGEMENT**



# *What happens if the cold chain is broken?*



# *What happens if the cold chain is broken?*

- When you defrost a frozen product (temperature  $> -18^{\circ}\text{C}$ ), even partially for a short time (a few minutes), microbial activity will resume.
- Breaking the cold chain has the following consequences:
  - Foodborne illness - Risk of poisoning.
  - Reduced preservation time.
  - Food waste - Loss of quality.

It should be noted that any product that has been defrosted must not be refrozen again.

# *Foodborne illness - a major public health issue in Africa*

- Africa has the world's highest per-capita rate of foodborne illnesses.
- Foodborne hazards are responsible for 137,000 deaths and 91 million acute illnesses in Africa every year, mostly affecting children under age 5.
- Much of the funding for food safety efforts on the continent come from Western donors — but most of those efforts concentrate on safety standards for foods exported to other countries.



# Foodborne diseases in the African Region

  
**>91 million**  
people fall ill



Every year  
**137,000**  
people die

representing  
**1/3** of the global death  
toll for foodborne diseases

Diarrhoeal diseases are responsible  
for 70% of the burden of foodborne  
diseases



Chemical hazards  
(cyanide and aflatoxin)  
cause  $\frac{1}{4}$  of deaths



Non-typhoidal *Salmonella*



Foodborne cholera  *E. coli*

Paralysis (Konzo) caused by cyanide in  
cassava, is unique  
to the African Region, resulting in death in  
1 in 5 people affected

**FOODBORNE DISEASES ARE PREVENTABLE.  
EVERYONE HAS A ROLE TO PLAY.**



# *Food waste - a major issue for Africa*

The United Nations (UN) estimates that each year approximately 1/3 of all food produced for human consumption is wasted.

Up to 45% of all food in Africa continent is thrown away.

However, only a very small proportion of this is due to consumer behavior.

Most of the waste is caused by incorrect storage, poor transport and the lack of sufficient refrigeration along the cold chain.

# *Drugs- Cold Chain*

- Most vaccines require an unbroken cold chain. While the vaccines for tetanus or hepatitis A and hepatitis B must be cooled, others are strictly restrained from being stored and transported at  $+2^{\circ}\text{C}$  to  $+8^{\circ}\text{C}$ .
- For example, the new vaccine for COVID-19, is bound to the cold chain.
- If these temperature limits are exceeded, the vaccine loses its effect. All involved parties, such as the pharma industry, pharmacies, doctors and hospitals, must ensure the cold chain is unbroken. Otherwise, they may use a vaccine that will be useless for several patients, raising the risk of spreading harmful diseases.

# *COVID-19 Vaccine Pfizer BioNTech*

- Maximum shelf life is 9 months stored in a freezer at  $-80^{\circ}\text{C}$  to  $-60^{\circ}\text{C}$
- 31 days at  $2-8^{\circ}\text{C}$  after thaw (assign immediately after removing from freezer)
- In addition, once removed from the fridge may be stored between  $2$  to  $25^{\circ}\text{C}$  for 2 hours prior to dilution
- In addition, once diluted may be stored between  $2$  to  $25^{\circ}\text{C}$  for a further 6 hours
- Once thawed, the vaccine cannot be re-frozen
- During storage, minimize exposure to room light, and avoid exposure to direct sunlight and ultraviolet light

# *COVID-19 Vaccine AstraZeneca Vaccine*

- Maximum shelf life is 6 months stored in a refrigerator between 2 to 8°C
- Once removed from the fridge, may be stored between 2 to 25°C for up 6 hours
- Once punctured, the vial must be used within 6 hours
- Must not be frozen
- During storage keep vials in outer carton to protect from light

# *COVID-19 Vaccine Moderna*

## *Vaccine*

- Maximum shelf life is 7 months stored in a freezer at  $-25^{\circ}\text{C}$  to  $-15^{\circ}\text{C}$
- Do not store on dry ice or below  $-40^{\circ}\text{C}$
- 30 days at 2 to  $8^{\circ}\text{C}$  after thaw (assign immediately after removing from freezer)
- Once removed from the fridge, may be stored between 8 to  $25^{\circ}\text{C}$  for up 12 hours
- Once punctured, the vial must be used within 6 hours
- Once thawed, the vaccine cannot be re-frozen
- During storage keep vials in outer carton to protect from light

# *How is the cold chain maintained and guaranteed?*

- Hermetically package the products.
- Store products in specific cold rooms.
- Keep products at a temperature  $< -18^{\circ}\text{C}$  in all processes.
- Use specialized transport.
- Measure and control the temperature throughout the chain.

*GHANA 2021*

*VS.*

*GHANA*  *2021*  
OVERSEAS COMMERCE  
GHANA LTD.

# *TRANSPORTATION*



*VS.*





# *TRANSPORTATION*



*VS.*



# *STORAGE*



*VS.*



# *STORAGE*



*VS.*



# *STORAGE*



*VS.*



# HANDLING



VS.



# *HANDLING*



*VS.*



# *LOADING*



*VS.*



OVERSEAS COMMERCE  
GHANA LTD.

# *QUALITY CONTROL*



*VS.*





# *PACKAGING*



*VS.*



# *TEMPERATURE CONTROL*



*VS.*



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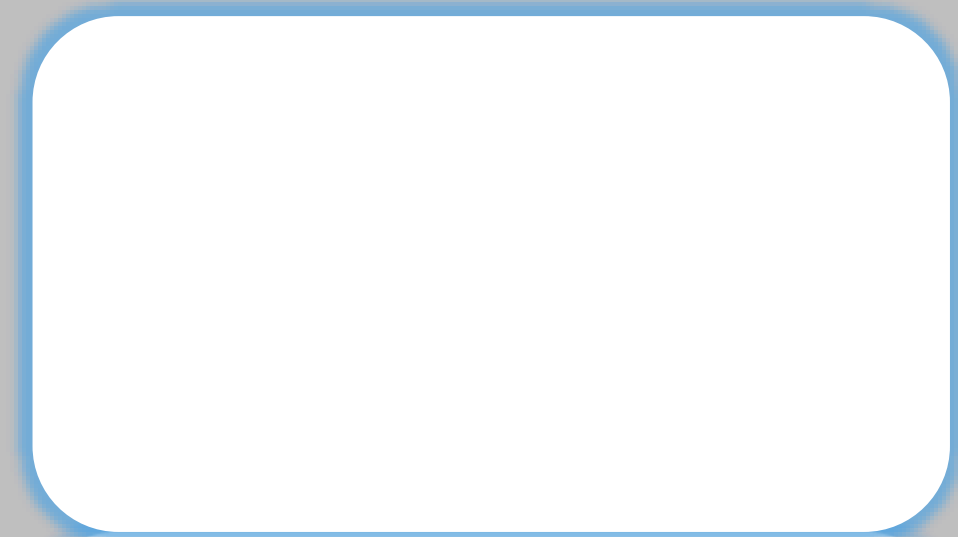


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2021

The Unbroken Cold Chain that will  
lead to a Healthier Community Life  
in Africa

**STARTS WITH US**





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*THANK YOU*

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