

# **ACHIEVING GLOBAL BEST PRACTICES ON AGRICULTURAL VALUE CHAIN FOR EXPORT (COCOA)**

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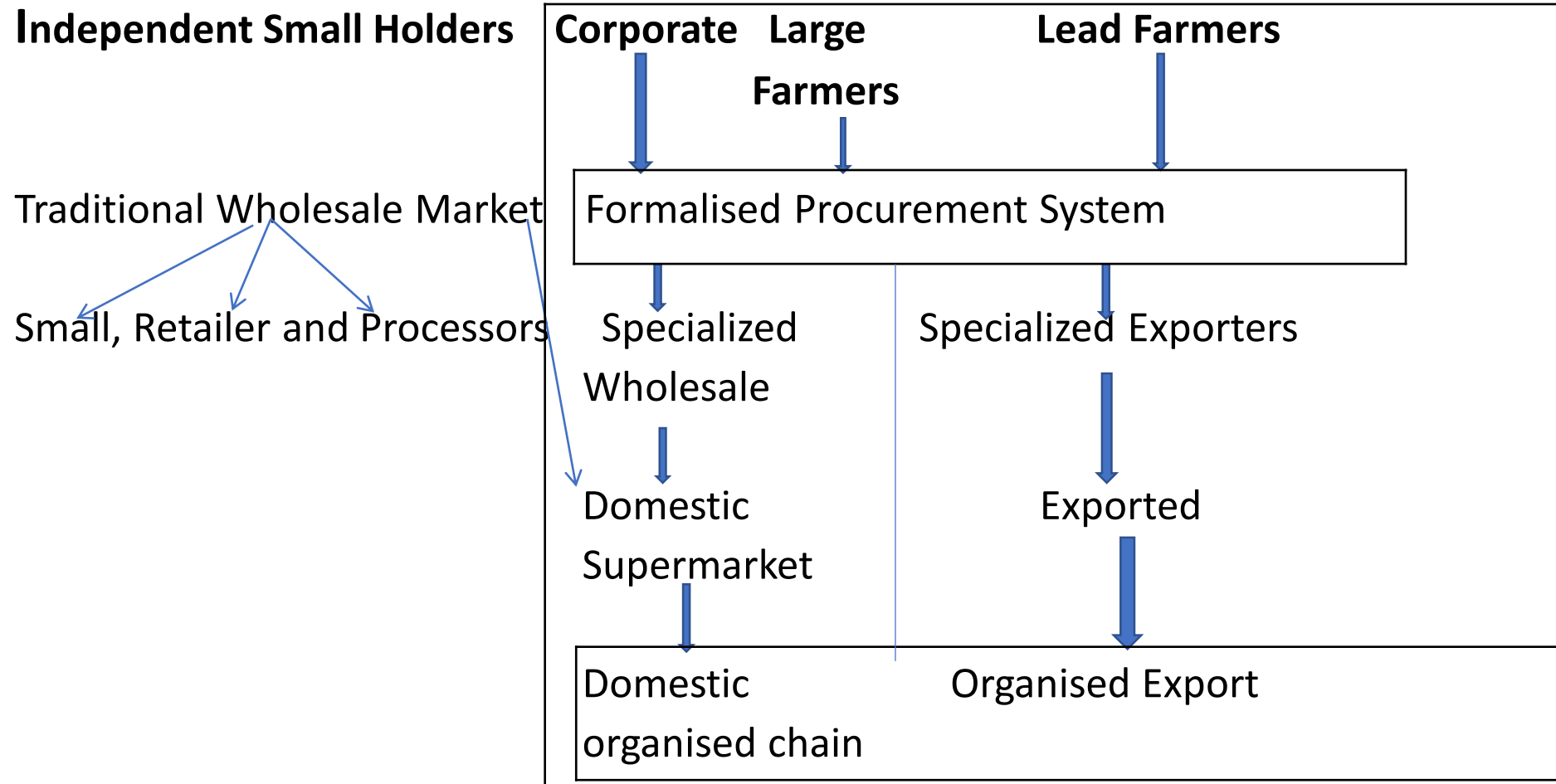
# Introduction:

- A value chain in Agriculture identifies the best set of actors and activities that bring a basic agricultural product from production in the field to final consumption, where each stage, value is added to the product.
- Value chain actors are those who are actually involved in the activities, Example; the Farmers, Distributors, Wholesalers, Retailers. It is all about the processing, packaging, storage, transportation, and distribution. What they have in common is the that, they become owners of the product at one stage in the value chain.

## TYPES OF VALUE CHAIN

- Traditional Agro Value Chain (AVC) and Modern Agro value chain
- Traditional AVC are generally governed through spot market transaction involving a large number of small retailers and producers
- Modern AVC are characterized by vertical coordination, consolidation of supply base through Agro –Industrial processing and the use of standard through out the value chain

# TRADITIONAL AND MODERN VALUE CHAIN IN AGRIC. PRODUCT



# STAGES IN AGRICULTURAL PRODUCT VALUE CHAIN



- Inputs/  
Equipments

Production

Processing and  
Manufacturing

Distribution  
Retail and  
Services

- STAGE 1: Input, agro chemical, Fertilizer, farm equipments. Firms in this sector supply agricultural inputs and services to the farmers at its primary stage.
- STAGE 2: Production in this stage includes all the activities involved in the production e.g land preparation, clearing of the land, seeds/seedlings, planting, crop spacing, weeding, method of harvesting, bagging and sorting.
- STAGE 3: Processing comprises manufacturing, e.g beverages are packaged for or by the company. Conversion of raw materials into either branded food for the market. Marketed at the retail stage for distribution and sales to the final consumers.
- STAGE 4: Distribute, sales and market of products to consumers. In this last stage of agricultural value chain(AVC), firms are involved in/with food distribution.

# COCOA AS A CASE STUDY

- Cocoa tree prospers under specific condition including fairly uniform temperature, high humidity, abundant rain, nitrogen-rich soil and protection from wind, thrives in rain forest.

## VALUE CHAIN FROM FARM TO CONSUMER

. Growing Cocoa Tree – (Seedlings) under protective shadow of plants like banana, plantain and palm trees.

Good Agricultural Practices like weeding, pruning, applying fertilizer and pest disease control needed for thriving cocoa tree.

. Harvesting- Involves removing pod from the trees and opening them to extract the wet beans. Harvesting can done at regular intervals as the pods do not all ripen at the same time. Cocoa tree flowers and produce pods in two cycles within six months.

. Fermentation- The wet cocoa bean under goes fermentation between 2 to 3 days. Pulp covered with mats or banana/plantain leaves. Heat from the sun assist to ferment the beans and dried in the sun for about 5-7days spread on a clean concrete floor. Drying process is important for final quality of the cocoa beans.



# Cont'd

- Sourcing and Marketing- The dried cocoa bean is cleaned and defected ones removed, weighed and packed in jute bag/sack. The dried cocoa bean is thereafter transported to exporting/warehousing company, inspected and graded.
- Packing and Shipment- Graded and loaded into truck, vessel or cargo in jute bag.
- Processing (Roasting and Grinding) – Prior to the export of cocoa beans, processing operations were performed entirely by importing Countries. But currently, origin Countries like Nigeria are increasingly engaged in processing.
- Manufacturing and Distribution- To create Chocolate, Cocoa beverages, liquor and butter are mixed with inputs such as vanilla, emulsifying agent and milk.
- Retail- Final supply/value chain includes packaging, commercial marketing final products are sold through grocery stores, wholesale etc.

# VARIETIES OF COCOA IN NIGERIA

## CRINTC- 1 to CRINTC – 8

- This eight hybrid have diverse genetic base, ie early bearing, high yielding with low input, resistant to major pest and disease, highly adaptable to cocoa ecologies of Nigeria with a very good cocoa quality traits.
- This is a high breeds specie to put the nation on track of meeting the global quest for organic cocoa.
- Note: Cocoa Association of Nigeria (CAN), Exporters in collaboration with the Council now play critical role of enlightening the farmers on the appropriate use of chemical and quality parameters, fermentation and drying of cocoa beans. However, there are complaints about the use of banned chemicals by farmers and the issue of Maximum Residual Limit (MRL) with Nigeria cocoa despite sustained enlightenment campaign.

The Cocoa Beans intended for export /end user must comply with specific quality parameters such as Size, Shape, Color, Flavor Aroma, Cocoa Butter and Protein Content.

**Table: Showing Quality Parameters For Raw Cocoa Beans Intended For Export**

Quality Parameters	Value	Reference Value
NIB (%)	$85.42 \pm 0.46$	75-89.5
HUSK (%)	$14.44 \pm 0.56$	10-15
GEM (%)	$079 \pm 0.07$	0.5-1.7
MOULD BEANS (%)	0	0.2
ROTTEN BEANS (TRULA) (%)	0	0.2
POORLY FARMENTED BEANS (%)	$4 \pm 1$	0.8
NUMBER OF BEANS IN 300G	$310 \pm 12$	250-320

# GOOD AGRICULTURAL PRACTICES(GAP)

- GAP refers to the use of good planting materials, proper shade management, maintaining and improving the soil fertility, weed and pest control, post harvest management practices.
- Certain types of farmers; lead farmer, trained farmers, certified farmers are relatively better implementers of GAP
- Weeding as at when due to reduce the incidences of disease by carriers such as insects, Laborious, yet necessary to ensure that cocoa tree are not competing with weeds for nutrients
- Organic cocoa( Certification Body) such as Ecocert, ISO 22000 and Nicert
- Conventional Cocoa-Applying fertilizer and chemical as may be recommended like; Granular fertilizer, Liquid fertilizer, Herbicide, Pesticides, Fungicides.

# PICTORIAL PRESENTATION OF COCOA PROCESS





# GOOD WAREHOUSING PRACTICES (GWP)

- GWP impact on the quality of cocoa beans like; clean jute bag, cross ventilation, accessibility within the warehouse, pallet and forklift.

Activities at the warehouse:

- Warehouse Inventory
- Maintenance
- Inspection
- Record keeping control
- Good Warehousing Practices (GWP) is synonymous with quality of cocoa beans.

# GOOD WAREHOUSING PRACTICES



GRANDSUR



GRANDSUR

# CHALLENGES TO AGRO VALUE CHAIN PRODUCT

Challenges and inability to maintain standard and quality of products includes;

- Poor storage and warehousing practices
- Limited access to credit facility
- Poor access and availability of inputs (fertilizer, chemicals) and roads to major cocoa producing areas
- Labour shortage and old age of farmers
- Impact of major insect pests and diseases
- Very old cocoa plantation with marginal yeilds.
- Regulators expected to formulate and enforce regulations to maintain quality output across the Agricultural Value Chain (FMARD, SON, NAFDAC, FPIS and NAQS). Regulatory bodies amongst other functions are to ensure that there are standard for production and export of food and agricultural product, also ensure compliance with set standard.



# WAY FORWARD

- By selecting best raw materials and agro-allied chemical product by applying the right production process in the value chain
- Improved cocoa seedlings
- Traceability of product in the value chain process
- Accredited testing laboratory for agro value chain product in line with global practices
- Sensitization and awareness campaign on good agricultural practices to enhance acceptability of agro value chain products.
- Proper fermentation of wet cocoa bean to produce the characteristic desirable aroma
- Encouragement of youths involvement in cocoa production through access to credit facility, land and modern technology in cocoa farming.
- Stakeholders engagement and support is crucial for Agricultural Value Chain process.

# NEPC INTERVENTION IN THE VALUE CHAIN SECTOR

- Product Development more than ever before has become very essential, most of the commodities from Nigeria for export are either raw or semi processed form. It is necessary for the Agricultural Value Chain actors to manufacture high value goods that are ready for the end users utility/export.
- The Council has so far sensitized critical stakeholders in training of farmers and other key players in the Agricultural Value Chain (AVC) across the Six geopolitical zone on identified good agricultural practices, good safety standard and certification as basis for export business. This includes cocoa, ginger, palm oil, sesame seed, shea nut butter, soya, spices and tomatoes. This intervention is to address the capacity gap in both the up stream and down stream sectors of the export value chain e.g Cocoa Research Institute of Nigeria (CRIN), National Horticulture Research Institute (NHRI) and National Cereal Research Institute

# Pictorial Presentation of NEPC Interventions



Cocoa Chemicals Intervention By NEPC



Cocoa Seedlings provided by the Council to Farmers

Thank you