



# THE ROLE OF AGRO INDUSTRIAL CLUSTERS IN INCLUSIVE AND SUSTAINABLE DEVELOPMENT

by

Chuma EZEDINMA  
*Officer in Charge*  
UNIDO Regional Office, Nigeria

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## Introduction

In Africa, government resources and capacities are limited and need to be used strategically.

Developing agro industrial clusters in Africa is a strategic approach to inclusive and sustainable development

To deliver effectively and efficiently in the global interest of inclusive employment and sustainable development requires **significant coordination** of efforts, resources and knowledge; and leveraging the core competences of key stakeholders namely:

- government,
- development partners,
- private sector entrepreneurs and businesses



## AFRICA'S Growing Challenge - Population

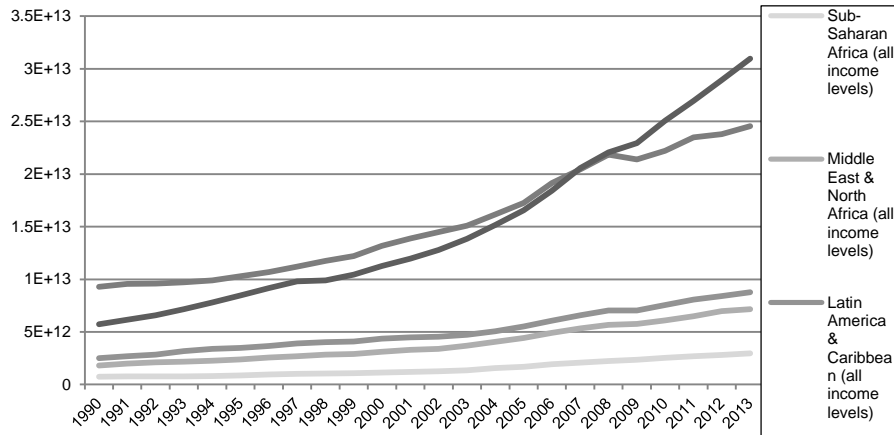


Figure 1: Trends in Gross National Income by Region - 2014  
Computed from [worldbank.org/indicator/](http://worldbank.org/indicator/)

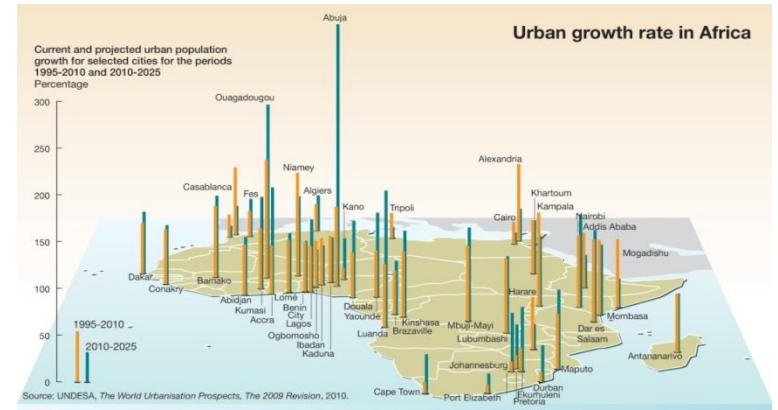


Figure 3: Changing urban population in some African Countries

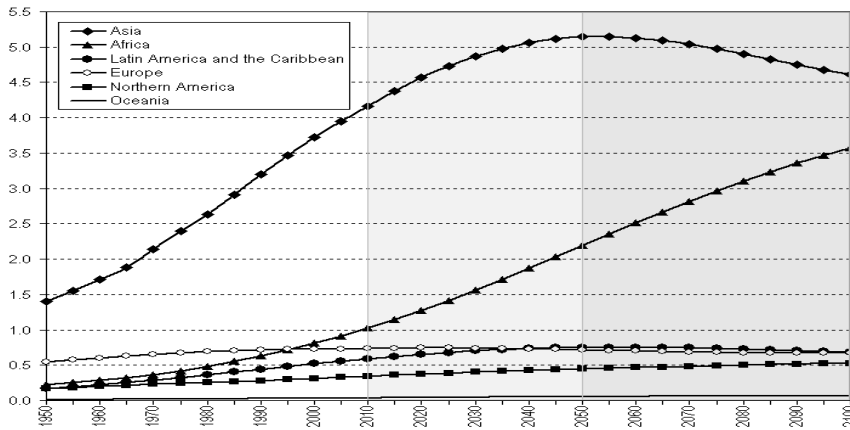


Figure 2: Global Population trend  
(Source: UN's World Population Prospects, 2014)

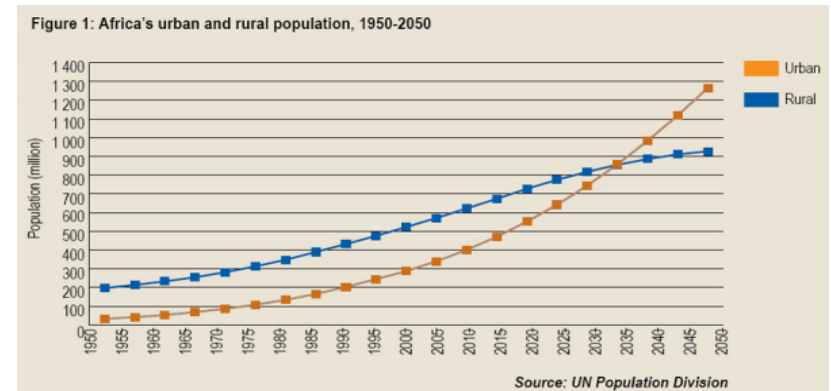
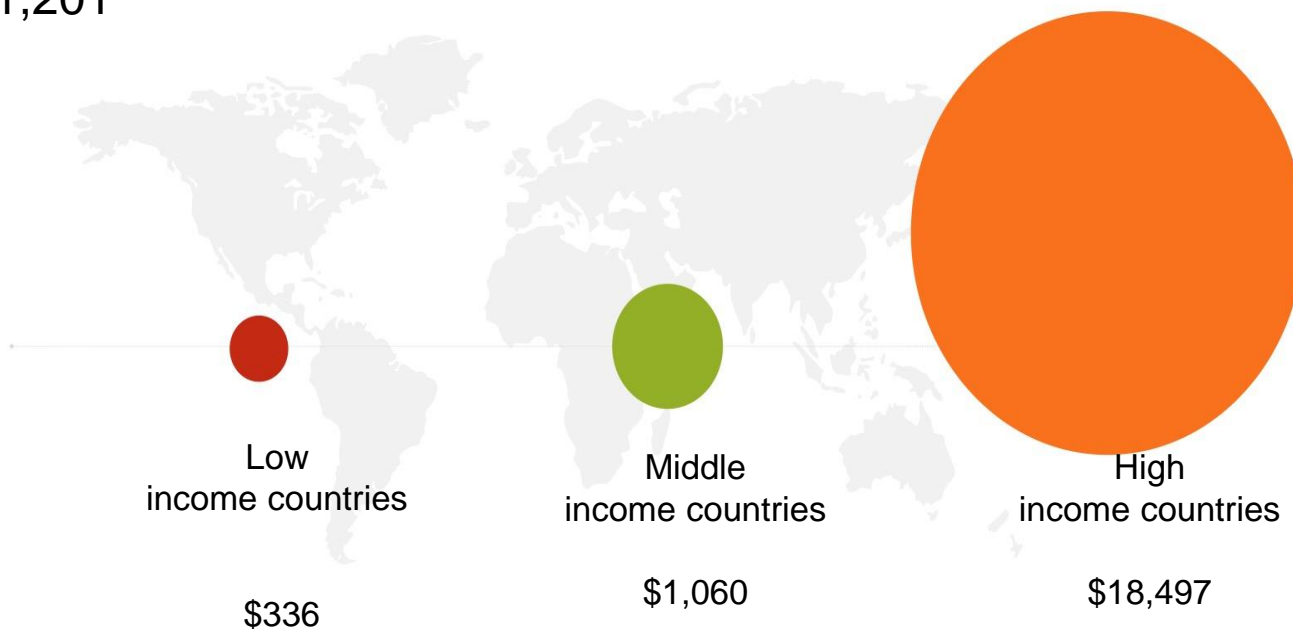


Figure 4: Africa's urban and rural Population, 1950 - 2050

## Low agricultural productivity

Agriculture value added per worker (2013)

World average:  
\$1,201



## Low level value addition

In least developed countries, only 38% of products are processed

### Effects:



Lost jobs in the processing sector



Lost income generation



Post Harvest Losses





## High Post Harvest Losses



## The Concept

Industry clusters: geographic concentrations of competing, complementary, or interdependent firms and industries that do business with each other and/or have common needs for talent, technology, and infrastructure. **Agro = SEZ focus on agro processing**

Business/Industry clusters is framed around four groups:

1. Geographical clusters that are identified by location
2. Sectoral clusters of businesses operating together from within the same commercial sector
3. Horizontal clusters between businesses at the level of shared resources (e.g. knowledge management)
4. Vertical clusters of businesses along a supply chain.

**Agro Industrial Cluster** is a concentration of producers, agro-industries, traders and other private and public actors engaged in the same industry and inter-connecting and building value networks, either formally or informally, addressing common challenges and pursuing common opportunities (Galvez-Nogales 2010).

.....an extension of industrial clusters popularized by Michael Porter in 'The competitive advantage of nations' (1990).



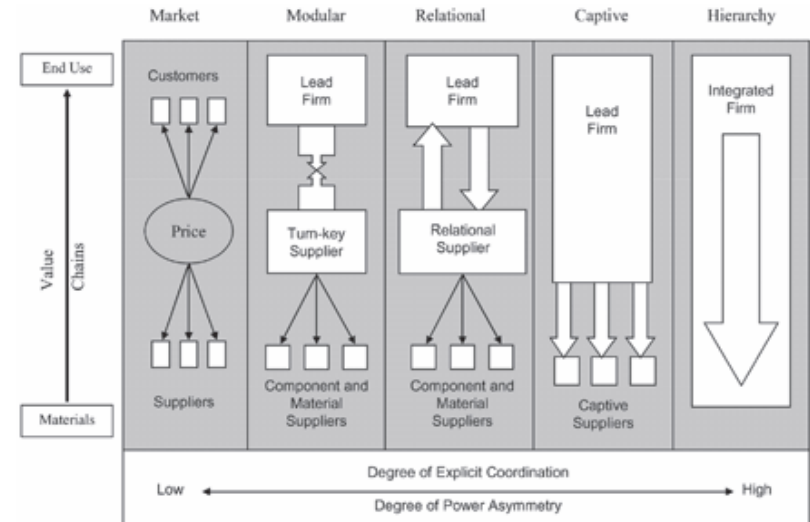
## Agro Industrial Clusters

The concept is based on the relationships between raw material suppliers and end users and the differences in design are defined by the degree of explicit coordination and power asymmetry

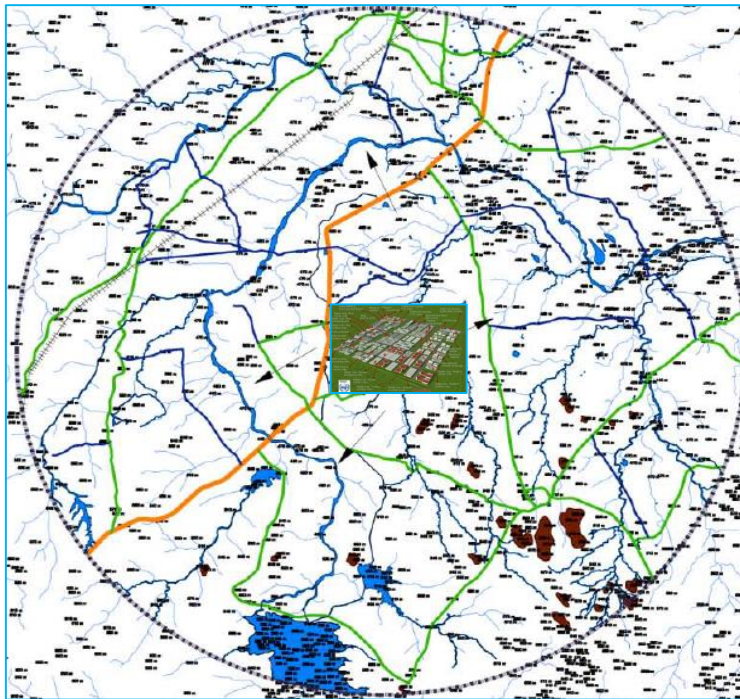
Also known as:

- Agroclusters
- Agropoles
- Agro-industrial park
- Agro food parks
- Agribusiness parks
- Mega Food Parks

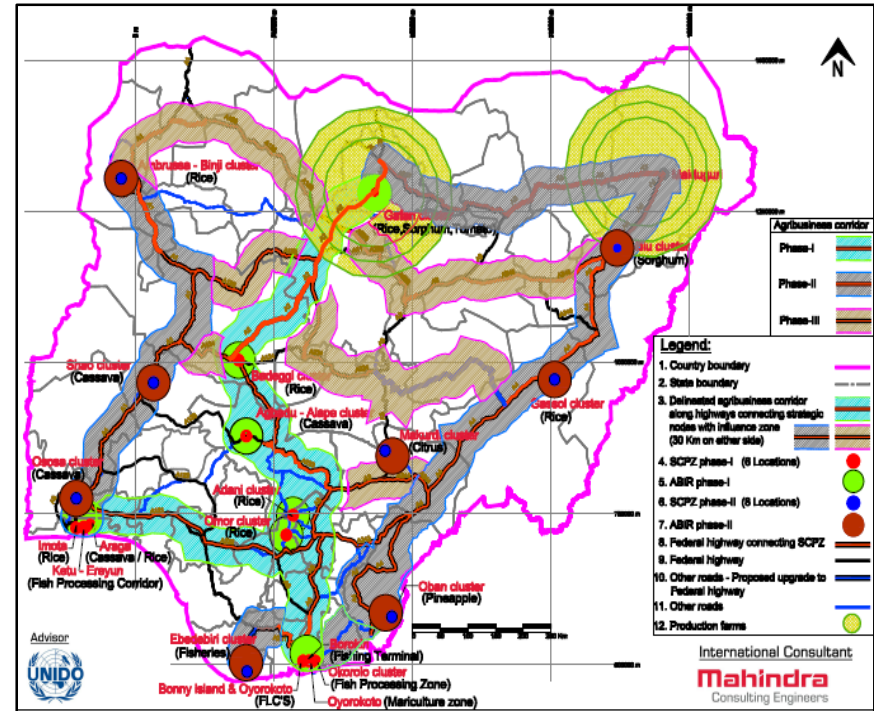
= Special Economic Zones and Industrial Parks  
- 15000 across the world (UNIDO 2015)



## Models:

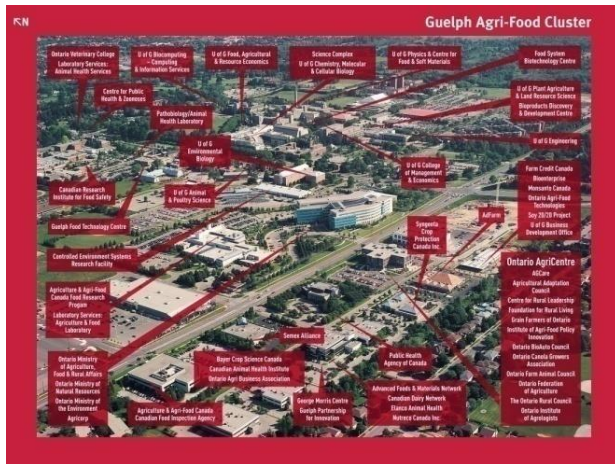


Centralized processing infrastructure in a farm production zone: Agro pole, Agro Industrial zone, SCPZ/ABIR, etc



Agro Industrial Corridors





THE GREENHOUSE INDUSTRY OF SPAIN (TRADITIONAL INDUSTRY)

Approx. area of production: 40,000+ hectares

Main production region/s: Alicante, Murcia, Almeria

Crops (vegetable): Tomato, capsicum, cucumber

Key Features: Plastic cladding, Roof height 2 - 3 metres, Minimal ventilation, Automatic irrigation control, Predominantly soil production, Little Heating, gas air heating, Some Integrated Pest Management, Some Recycled water

THE GREENHOUSE INDUSTRY OF THE NETHERLANDS

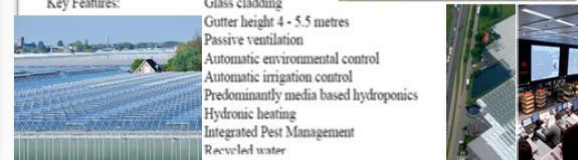
Approx. area of production: 12,000 hectares

Main production region/s: Westlands, Aalsmeer district

Crops (vegetable): Tomato, capsicum, eggplant, cucumber

Crops (cutflower): Rose, tulip, chrysanthemum, gerbera, carnation

Key Features: Glass cladding, Gutter height 4 - 5.5 metres, Passive ventilation, Automatic environmental control, Automatic irrigation control, Predominantly media based hydroponics, Hydronic heating, Integrated Pest Management, Recycled water



Examples from around the world



Strategy: Creation of inexpensive energy-efficient national food cluster, Establishment of world-class R&D base and support for R&D, Nurturing as an international food cluster by attracting global anchor corporations

## Examples from around the world

Spain vegetable cluster covering an area of 40,000 + hectares spread across Alicante, Murcia and Almeria regions

Dutch horticultural cluster for entire horticulture chain with an area of 12,000 hectares in Westlands, Aalsmeer district, Netherlands

Latin American agri clusters like

- Michoacan, Mexico
- Colima, Mexico
- Ceracruz, Mexico,
- Antioquia, Colombia
- Rio Grande Do Norte, Brazil
- Petrolina Juazeiro, Brazil
- North of Minas Gerais, Brazil
- Santa Catarina, Brazil
- Temperate Cluster, Argentina
- O'higgins, Chile
- Maule, Chile
- Colombia and Ecuador clusters

Western gap cluster in Thailand -35200 hectares

Crop processing cluster in dong lieu, Vietnam

Fish processing clusters around lake Victoria, Kenya – Regional

Montana food cluster

Foodprocessing cluster, Namibia

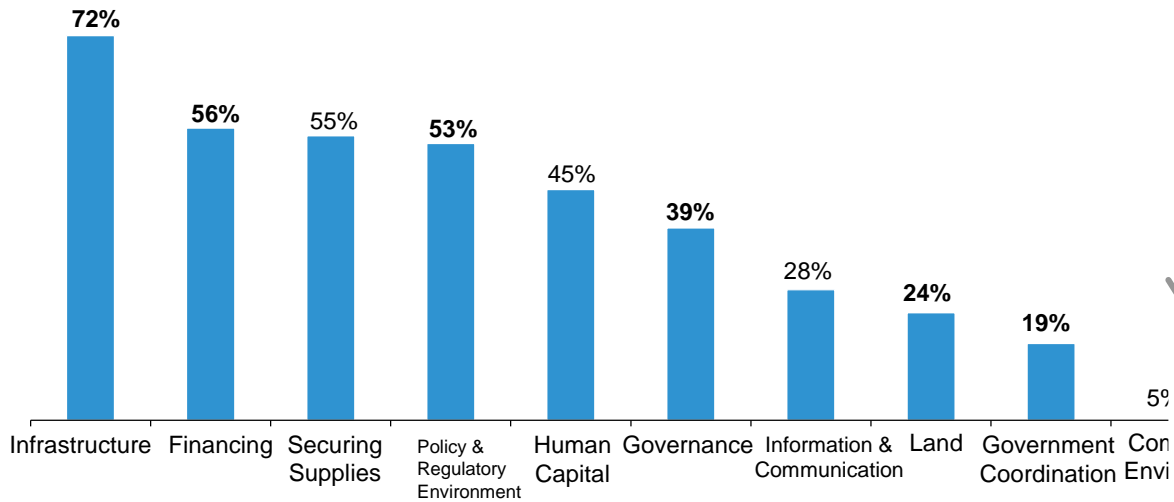
## Key lessons from cluster development

Several success stories can be cited for cluster development across the globe. :

<p>Large scale development</p>	<p>Economy of scale that facilitates the occupant industry to achieve the required threshold</p>	<p>Excellent forward and backward linkages with synergy among the occupants and suppliers</p>	<p>State of the art infrastructure facilities</p>	<p>World class operation and maintenance strategies and support</p>	<p>Technology innovation driven development</p>	<p>Private sector playing a meaningful role in the entire development cycle</p>
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## From Comparative Advantage to Competitive Advantage



### Supply side constraints in Agro industrial development



Addresses challenges to Agro-Industrialization simultaneously



## Stakeholders and Beneficiaries

There are, basically, *five* sets of stakeholders to be involved from the beginning of the project:

- (1) local investors and industry associations;
- (2) international investors;
- (3) state (or province) and local governments;
- (4) selected (most relevant for the project) federal ministries; and
- (5) development partners.

### Several Beneficiaries

- (1) Local Farmers/Farmer Coops
- (2) Local & International agro industry investors
- (3) Service Providers
- (4) State (or province) and local governments;
- (5) Government Ministries; Departments and Agencies
- (6) Site/Estate/Infrastructure Investors
- (7) .....etc

# Development Strategy and Ownership

*“Private sector led, Government enabled”*

- Develop enabling environment & framework - (policies, finance, land, incentives)
- Provide connectivity to critical national public infrastructure such as land, roads, and energy
- Regulatory Framework

- Financing and service support
- Develop market linkages to integrate smallholders, rural population, and women
- Capacity building



- Invest in modern agri-industrial processing, associated production & technology
- Invest in on-site infrastructure and services
- Provide sustainable site management communities
- Build capacity and technical expertise

# Agro Industrial Clusters:

..... a new agricultural investment framework

**A key objective is to stimulate private sector investments to drive a market-led agricultural transformation**



**Shift agriculture from government controlled to private sector led**



**Transform the agricultural financial landscape**

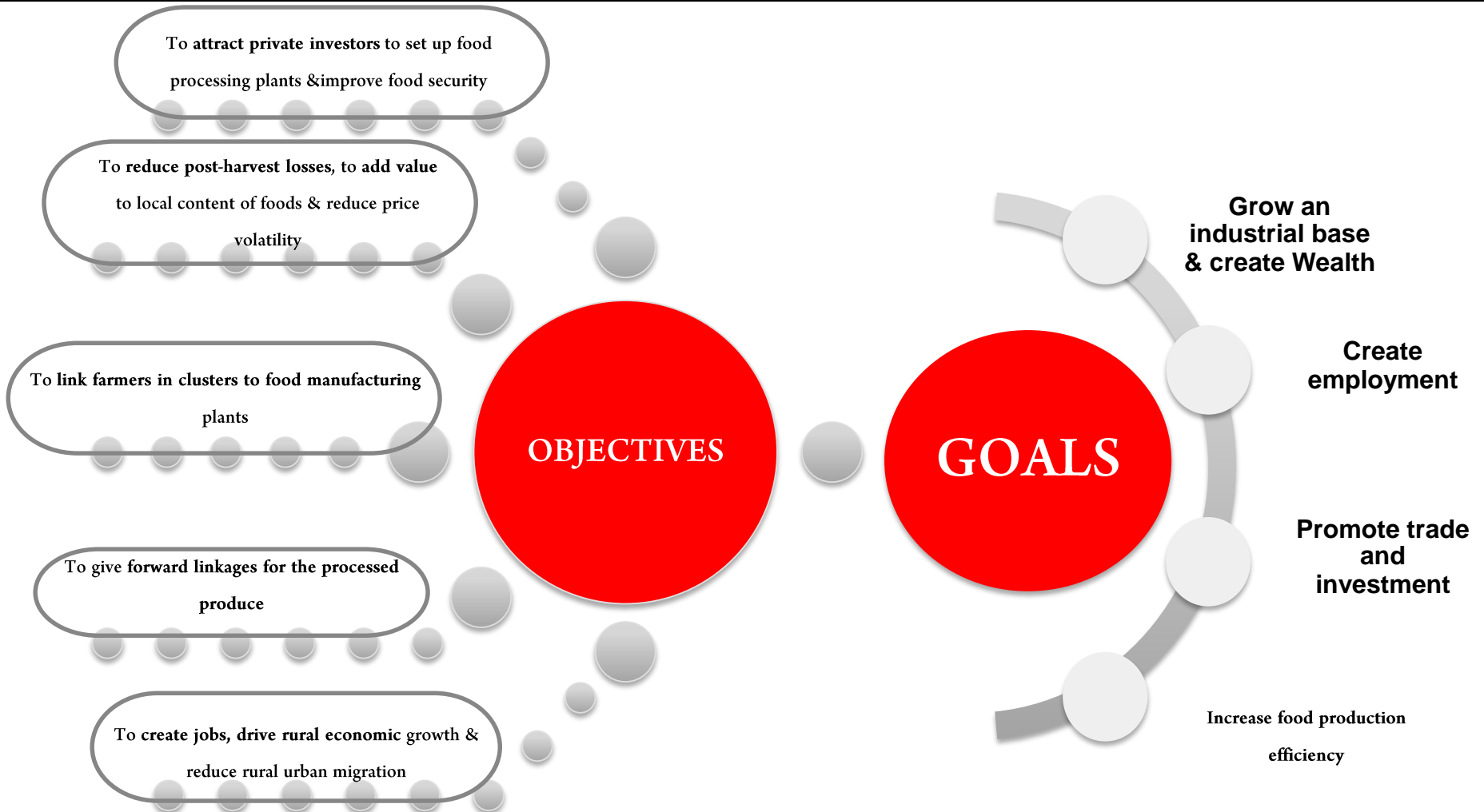


**Channel investments in infrastructure and services**

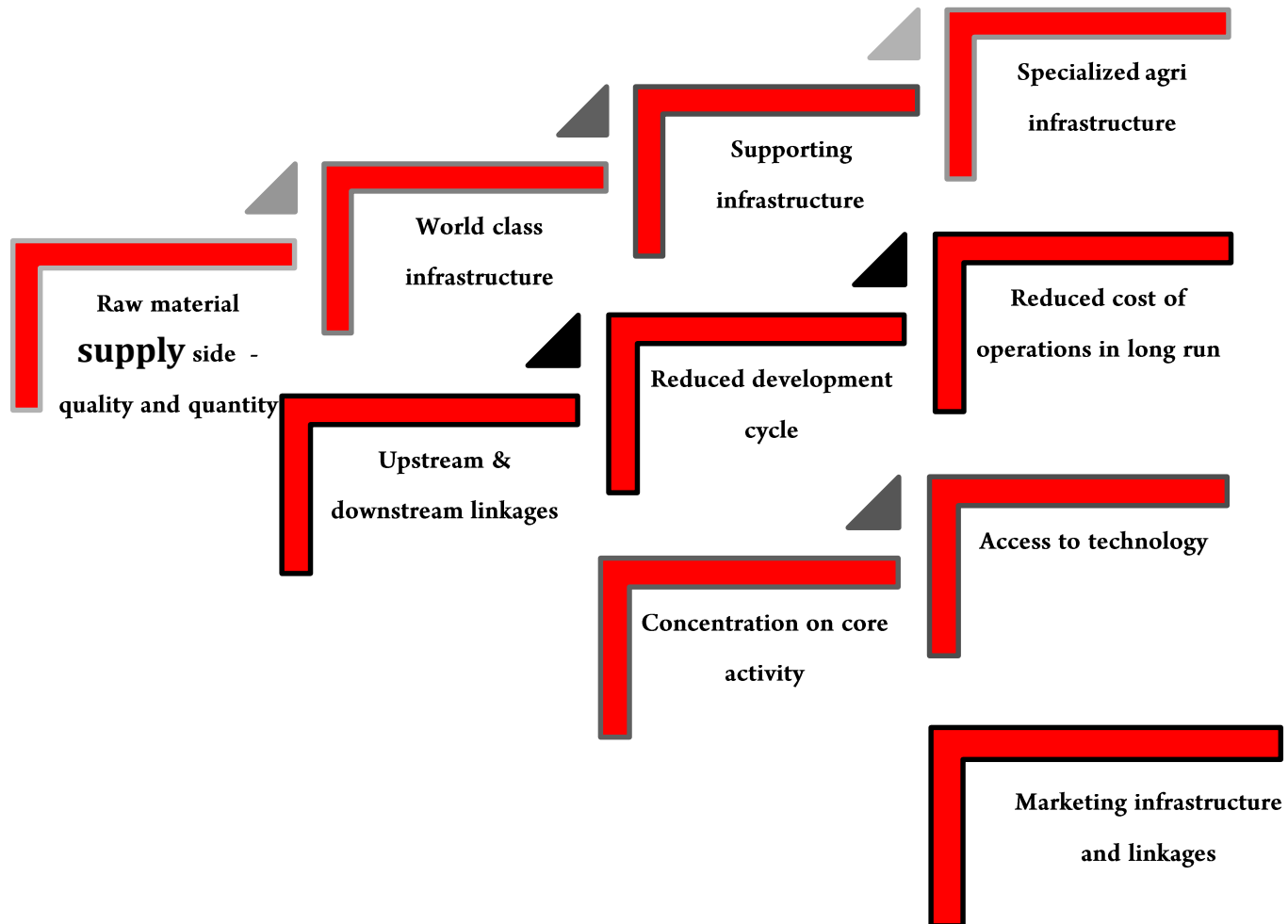


**Strengthen the policy and investment climate**

## Goals and Objectives



## Private Sector Expectations



## Developing Agro Industrial Clusters: **Key Documents**

### **AIZ Policy**

**Provides the roadmap to guide the development, management and operation of the AIZ and will be used, alongside additional legal instruments –**

**Memorandum of Understanding, Tripartite Agreements, Standard Offer Agreements to be executed, as necessary, between the Federal, State Governments and Zone Investors**

### **Bill**

**Legislative Bill for the establishment of the AIZ Law, the AIZ Institution/Authority**

**institutional arrangements, roles and responsibilities for the development and operation of the Agro Industrial Zone**

### **Master Plan**

**Long-term planning document that establishes the framework and key elements of a site reflecting a clear vision created and adopted in an open process, defines a realistic plan for implementation, including a business case and subsequent approvals by public agencies**

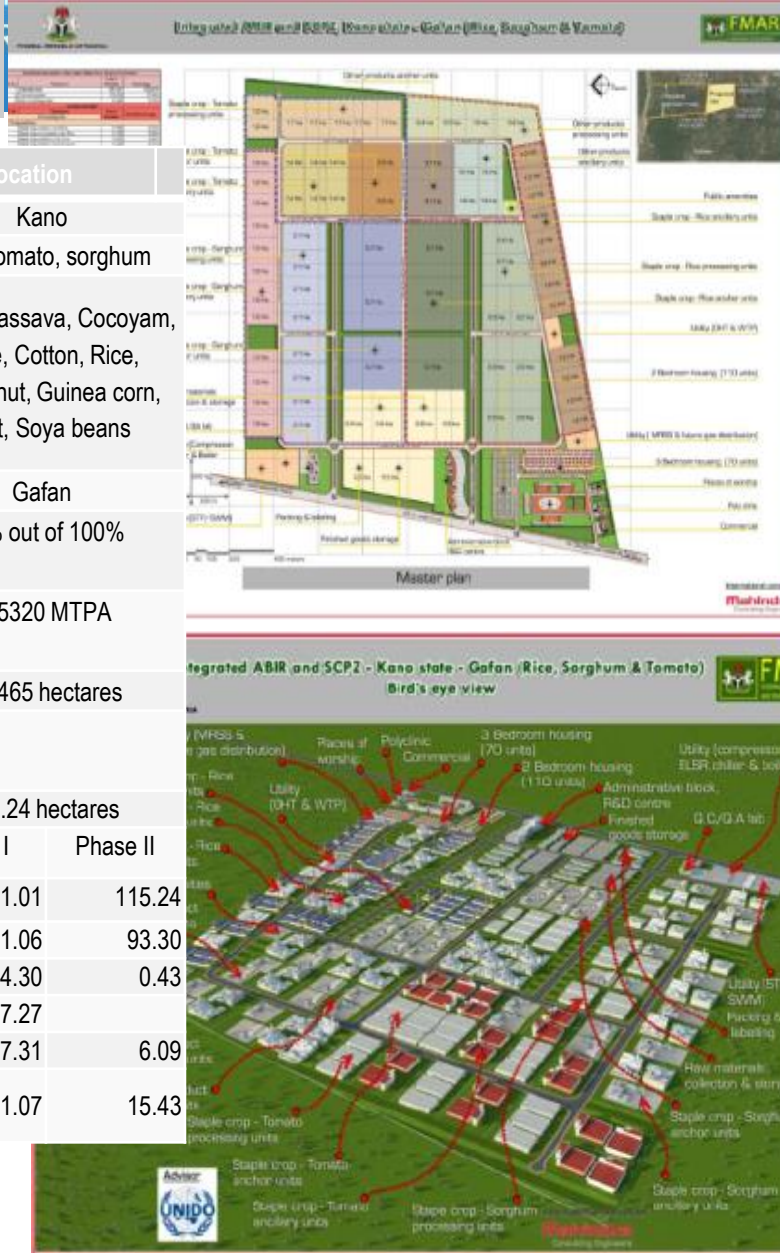


## Master Plan: A Strategic Business Case

1	• Agro clusters	12	• Agribusiness analysis and arrangements
2	• Agro & allied sector potential of the country	13	• Project cost
3	• Conceptualization and configuration of the agro industrial zone	14	• Revenue drivers
4	• Stakeholder mapping and consultation	15	• Means of finance, financial and investment model analysis
5	• Vision and mission	16	• Development strategy, project implementation structure, legal aspects and document templates
6	• Land for the agro industril zone	17	• Branding and marketing strategies
7	• Zone definition	18	• Implementation schedule and micro level action plan
8	• Master planning of the core processing zone and configuration	19	• Risks mitigation plan
9	• Infrastructure and facilities within the core processing zone	20	• SWOT analysis
10	• Infrastructure gap analysis for procurement zone	21	• Benefits and contributions
11	• Environmental and social assessment		



# Bunkure, Kano

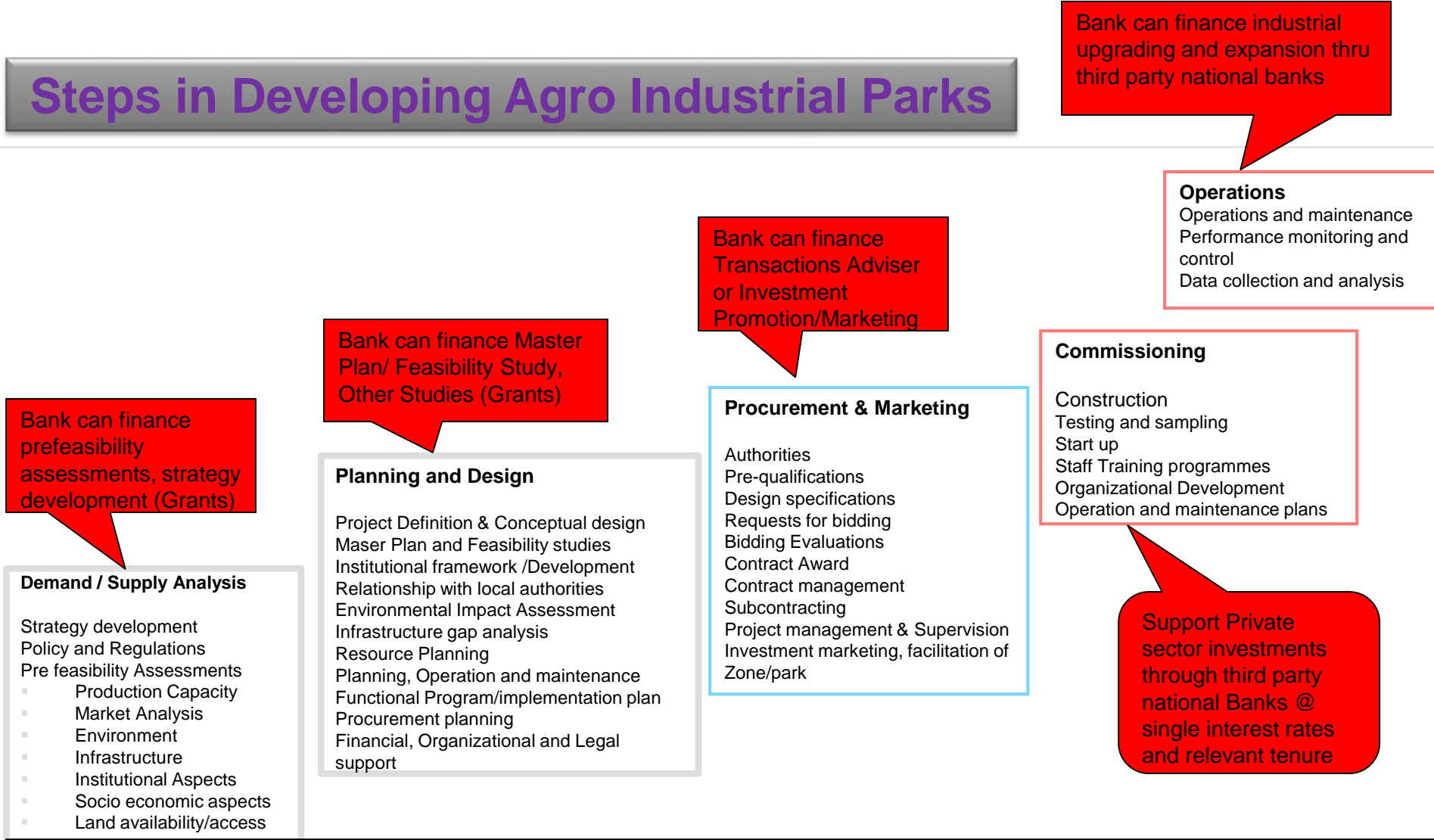


Project cost				
SCPZ Phase I development		₦ 4462.72 million	(27.89 million US\$)	
SCPZ all phases		₦ 7861.51 million	(49.13 million US\$)	
Specialized agri infrastructure cost within ABIR		₦ 11440.22 million	(71.50 million US\$)	
External connectivity and offsite infrastructure cost - SCPZ		₦ 4882.50 million	(30.52 million US\$)	
Grand total cost for integrated ABIR and SCPZ		₦ 24184.23 million	(151.15 million US\$)	
Investment by GoN and state government		₦ 9000 million		
Investment by SCPZ by PPP		₦ 7861.51 million		
Investment by SCPZ PPP or separate SPV or GoN and state government		₦ 7322.72 million		
Revenue drivers				
Total revenue – during 1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup> and 5 <sup>th</sup> year of operation		₦ 4550.39 million		
		₦ 2992.06 million		
		₦ 2321.23 million		
		₦ 2382.68 million		
		₦ 2432.15 million		
Means of finance		The project shall be funded through equity, term loan in the initial phase and in the subsequent phases through the internal accrual		
Equity		₦ 1785.09 million	(11.157 million US\$)	
Term loan		₦ 2677.63 million	(16.735 million US\$)	

S. No.	Description	Location
		Kano
1	Focus crop	Rice, tomato, sorghum
2	Additional crops	Beans, Cassava, Cocoyam, Maize, Cotton, Rice, Groundnut, Guinea corn, Millet, Soya beans
3	SCPZ location	Gafan
4	Composite score of the site	75% out of 100%
5	Raw materials required for the SCPZ	575320 MTPA
6	Growing area required	148465 hectares
7	Land use pattern – hectares	
	Total area	257.24 hectares
		Phase I      Phase II
I) Total processing area		121.01      115.24
1.1) Total industrial area		81.06      93.30
1.2) Amenities		4.30      0.43
1.3) Utilities		7.27      0.43
1.4) Road		7.31      6.09
1.5) Greenery and open space		21.07      15.43



# Steps in Developing Agro Industrial Parks

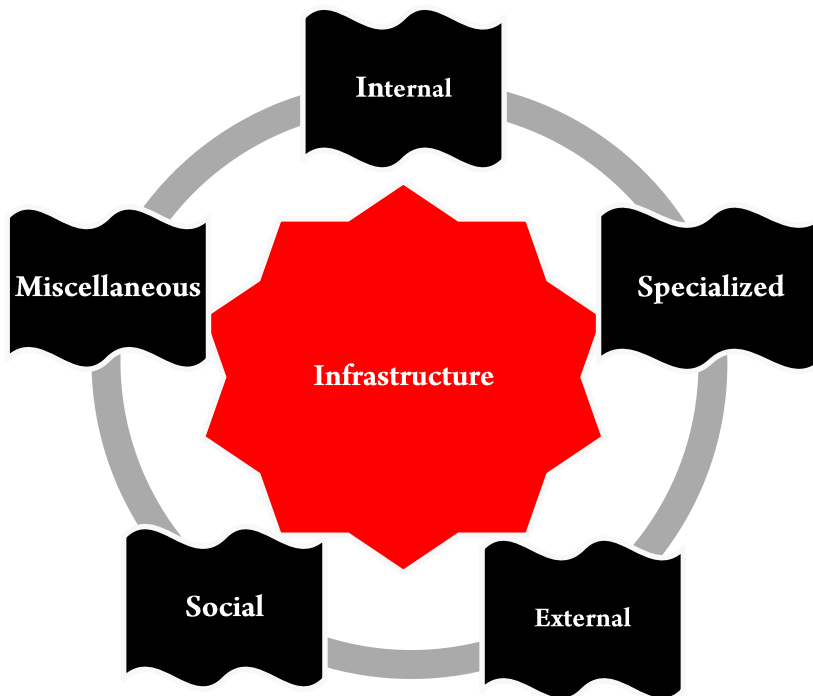


1 Preliminaries,

2 Development,

3 Implementation

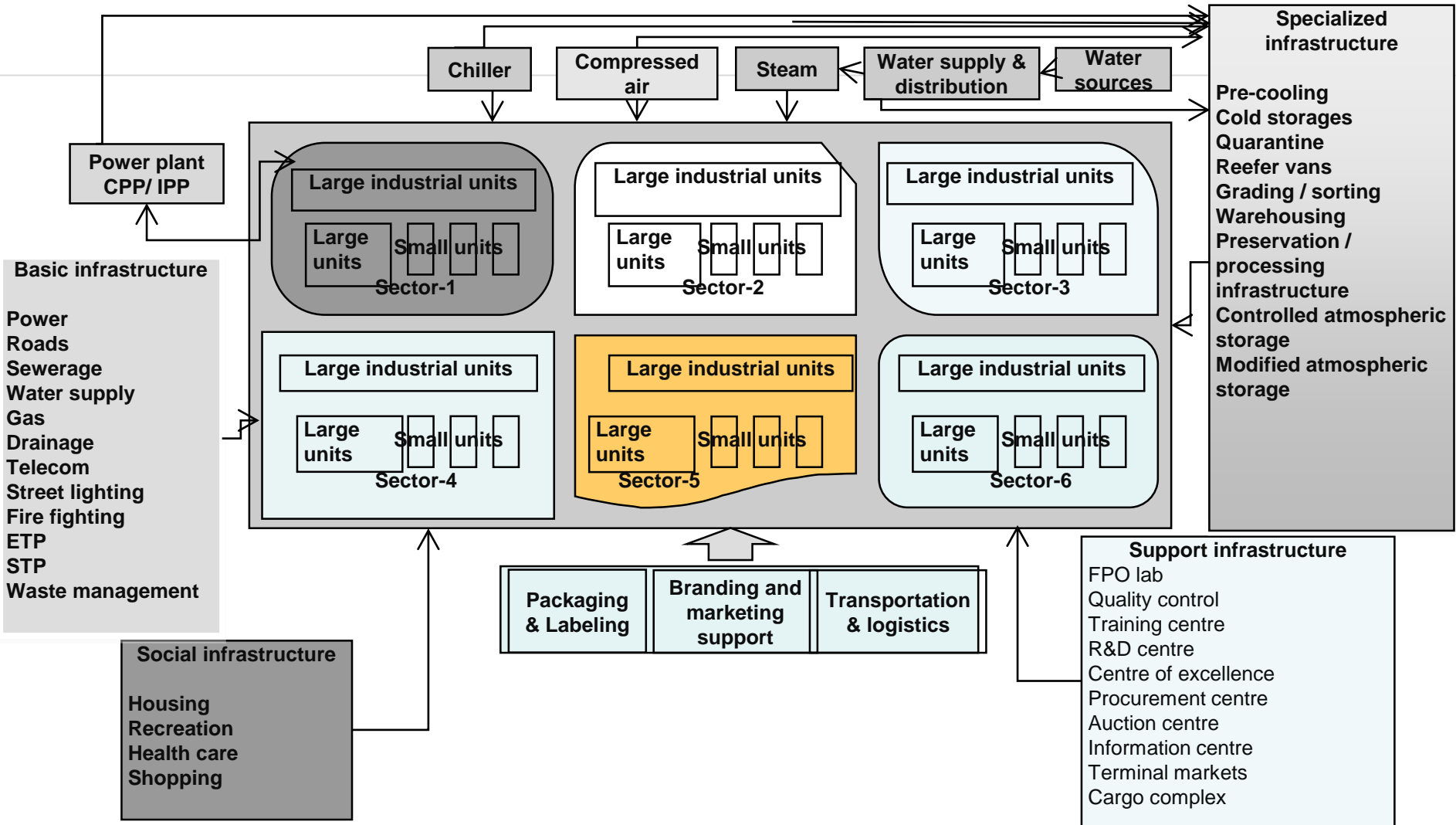
Infrastructure is Key → # 1. ENERGY



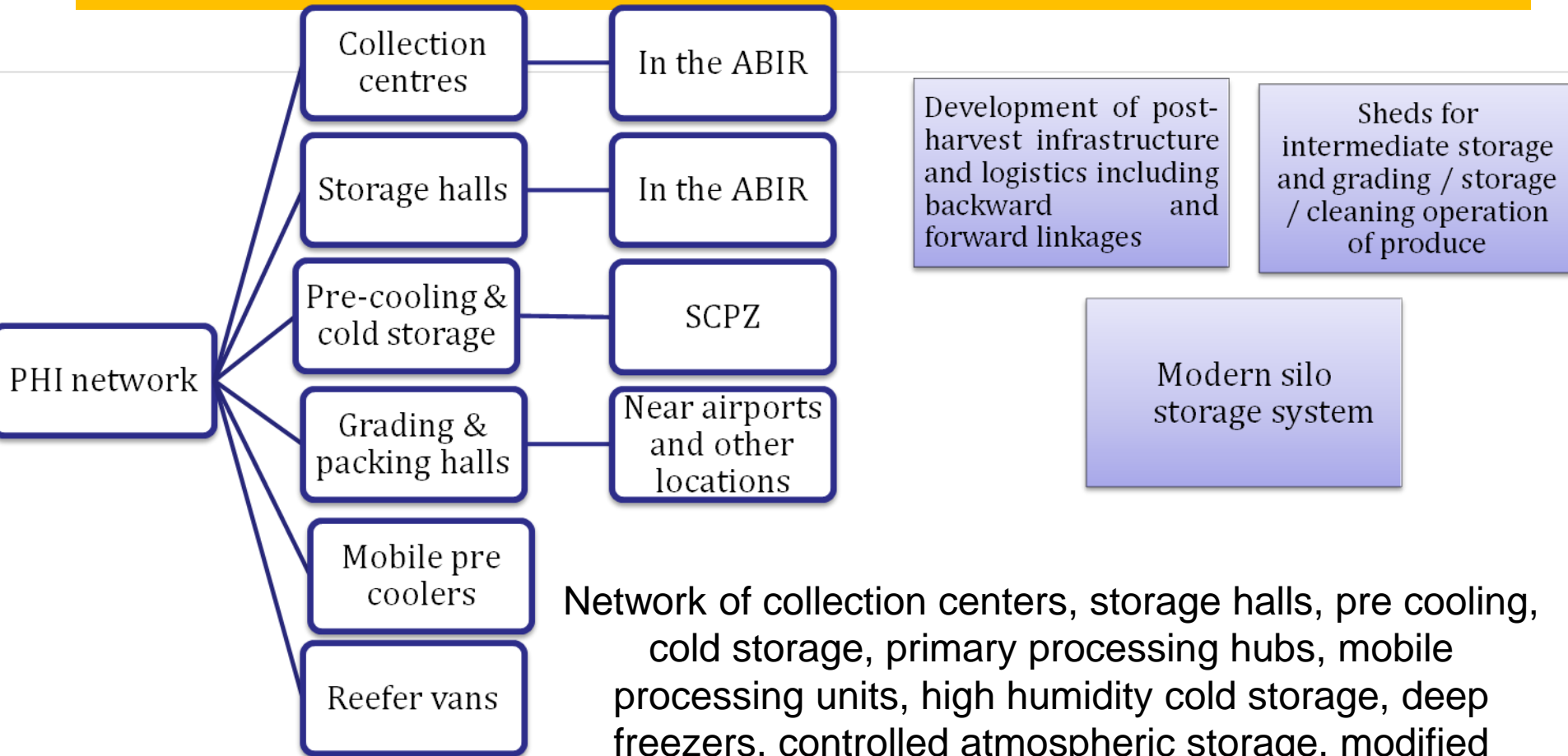
Two turbines of 200 kW each in Kakara, Highland Tea factory



# 1. Internal Infrastructure



## 2 - Agri Infrastructure



Network of collection centers, storage halls, pre cooling, cold storage, primary processing hubs, mobile processing units, high humidity cold storage, deep freezers, controlled atmospheric storage, modified atmospheric storage, grading & packing halls, pack houses, refrigerated transport, warehouses etc.



## 3 - External Infrastructure to the AIZ

**External infrastructure connects the AIZ with the outside world providing forward and backward linkages necessary for the operations.**

**Responsibility of Government**

**Road connectivity**

**Highway strengthening**

**Rail connectivity**

**Air & Sea Port connectivity**

**External water supply source linkages**

**External power linkages**

## Funding Agro Industrial Zones

SCPZ/ABIR Nigeria	Main crops	SCPZ cost phase I (US\$ million)	SCPZ cost total	Agri-infrastructure cost (feeder roads, rural power, etc)	Connectivity infrastructure cost (SCPZ road, power lines)	Total cost (US\$ million)
Badeggi, Niger	Rice	23.4	51.6	115.1	14.7	181.4
Gafan, Kano	Rice, tomato, sorghum	27.9	49.1	71.5	30.5	151.1
Omor, Anambra	Rice	30.2	53.2	77.3	56.1	186.6
Okorolo, Rivers	Fish	11	14.9	58.4	6.3	79.6
Agbadu, Alape cluster, Kogi	Cassava	30.4	52.2	137.9	124.6	314.7
Adani, Enugu	Rice	31.5	53.9	67.4	28.4	149.7
<b>Total</b>		<b>154.4</b>	<b>274.9</b>	<b>527.6</b>	<b>260.6</b>	<b>1,063.1</b>

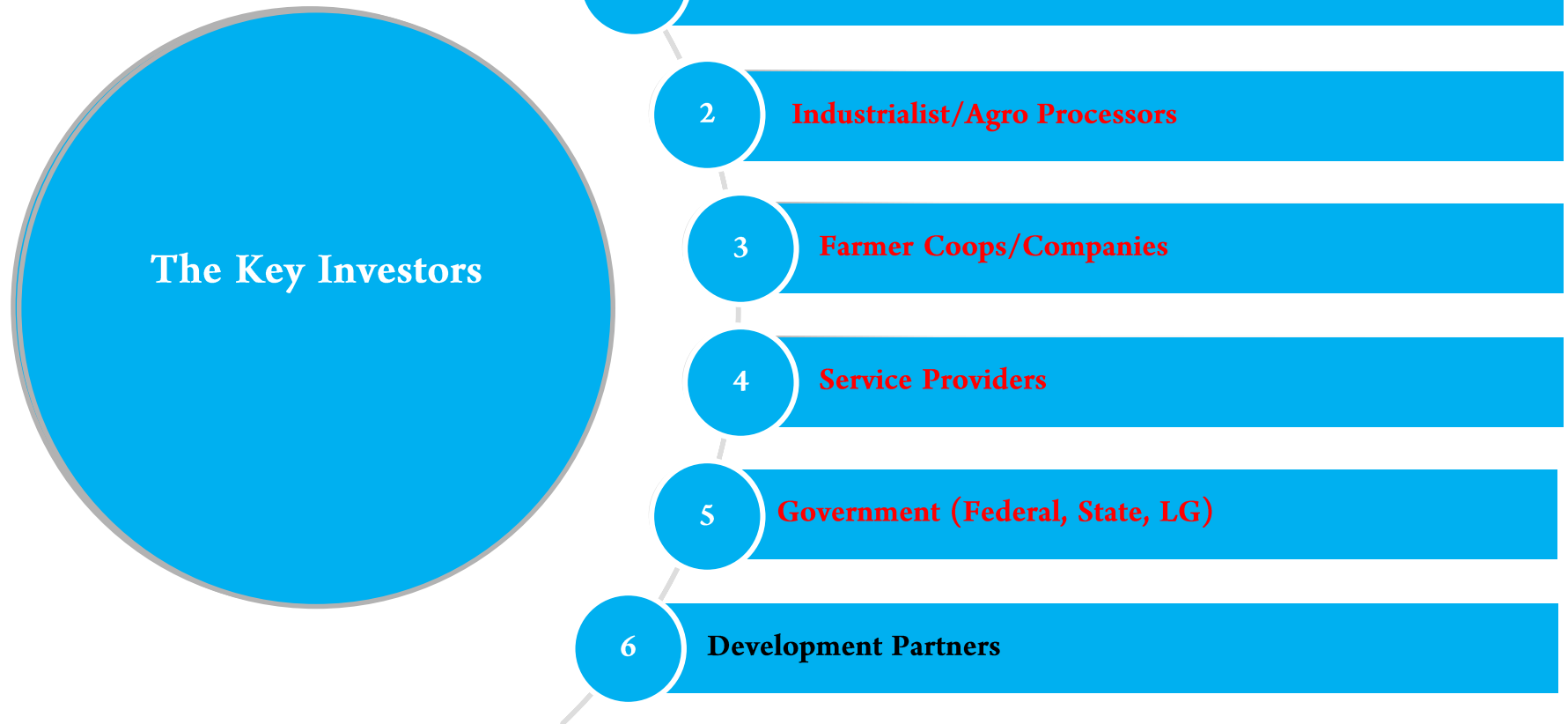
### Source of Funding

**Private Sector (Site Developer; Occupant Industry)**

**PPP/Development Partners/Donors/Service Providers**

**Government – Public Sector/Donor (Loans)**

## Key Investors



\* Require different financial products and mechanisms

## Risks: Coordination and Continuity

Providing infrastructure involves the services under the scope of several Ministries (e.g., energy, transportation, communication, environment, science and technology etc.) and a very close inter ministerial coordination is required

- **In project management coordination**, there are, basically, *two* main problems to be avoided:
  - (1) *inter-governmental agency rivalry*, which is a result of lack of coordination and even opposition between government agencies; and
  - (2) *inefficient decision-making processes*, which is due to the fact that multiple reporting structures and reporting layers are expected to lead to inefficiencies and delays in the process of project implementation.
- (3). Support at the highest level of Government .....& the Bank



## Areas of possible technical support from UNIDO

- Technical support in Master plan design of Agro Industrial Zones
- Technical support to conduct feasibility studies (COMFAR) to establish the potential/profiles of the constituting agribusiness units (agro-processing/value-addition)
- Policy development and institutional strengthening to support Agro Industrial Park concept
- Technical support to development of strategies for agricultural commercialisation / agro-industrial development & management capacity
- Capacity building and integration of value chain development strategies
- Capacity building in quality infrastructure, packaging, food safety and hygiene control → Good Manufacturing Practices (GMP)
- Capacity building in Investment and Technology promotion



# Thank You