



International  
Trade  
Centre

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# PACKAGING SUPPLY CHAINS IN DEVELOPING COUNTRIES

A critical factor in the development of economies

A presentation to: IPACK IMA 2009

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# ITC Export Packaging

- More than 30 years of existence
- ITC the only UN/WTO agency with a specialized, dedicated export packaging service
- Goal: Improve the packaging performance of exports from developing countries through better packaging
- Help set up and support packaging institutes, technical and information centers
- Direct advisory to exporting SMEs through global networks of packaging advisory exports

Since 2006, ITC has been conducting the first ever most comprehensive packaging supply chain analysis in Africa, covering in depth analysis of the key players in the region, including Côte d'Ivoire, Ghana, Kenya, Madagascar, Mali, Mozambique, Nigeria, Sénégal, South Africa, Tanzania.

The objective of this regional diagnostic was to understand the strengths and weaknesses of the packaging industry sectors and their ability to supply the exporting sectors, at national and regional levels, provide guidance for governments, the industry and the international donor community.

# Introduction



The impact of globalization is directly felt in the field of packaging:

- Exporters have to comply increasingly with international standards and requirements/specifications
- Expectations of importers and buyers are changing drastically and rapidly



European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung



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## Developing countries, trading with developed countries in particular, are often at a major competitive disadvantage :

- Packaging is not perceived as a necessary and a fundamental part of any product
- Packaging of the exported product is poor
- Small and medium size enterprises (SME) are increasingly participating in international trade



## Developed economies have had to cope with an increasing amount of packaging material waste

### ► Response of:

- the legislators : partial bans, packaging taxes and demand of better material recycling
- the packaging industry: source reduction, compostable/bio/photodegradable packaging
- packers : a close look at their real product protection needs and close collaboration with their packaging material suppliers



In developing economies, there is a great pressure to reduce packaging to the bare essentials, and sometimes to sub-optimal level:

- Trade off between less packaging and the need to produce more goods to compensate for handling losses during transport
- Inadequate packaging



## The developed country consumer requires an easy and convenient use:

- Packs easy to open, to serve, re-sealable and intact, to transport and store and at a discount as well
- Possibility for packs to be directly warmed or cooked
- Packs attractive with informative decoration



In developing countries, packs serve local domestic markets as well as the sub region borders and the large export markets:

- The whole range of packaging materials is not available
- Traditional packaging types are jute bags, woven PP bags, intermediate bulk containers, PE pouches and recovered packs
- Cost/price are fundamental



# Inadequate packaging is definitely a hindrance to the development of exports

## General imbalance between supply and demand for packaging materials:

- Mismatch not homogenous across developing countries

### Question:

What drives the demand for packaging materials, the export market or the domestic market ?



**Studies and audits of the packaging sector have been conducted in selected countries**

## ITC focuses its export activities on capacity building programmes addressing exporting SME and trade support institutions

- The objective is to improve the export competitiveness of exports in the regions by:
  - scaling up the capacity and improving the capabilities to both private and institutional packaging sectors to serve the needs of the exporting industries
  - identifying technical assistance needs for the packaging user sectors

# Packaging supply chain in Africa

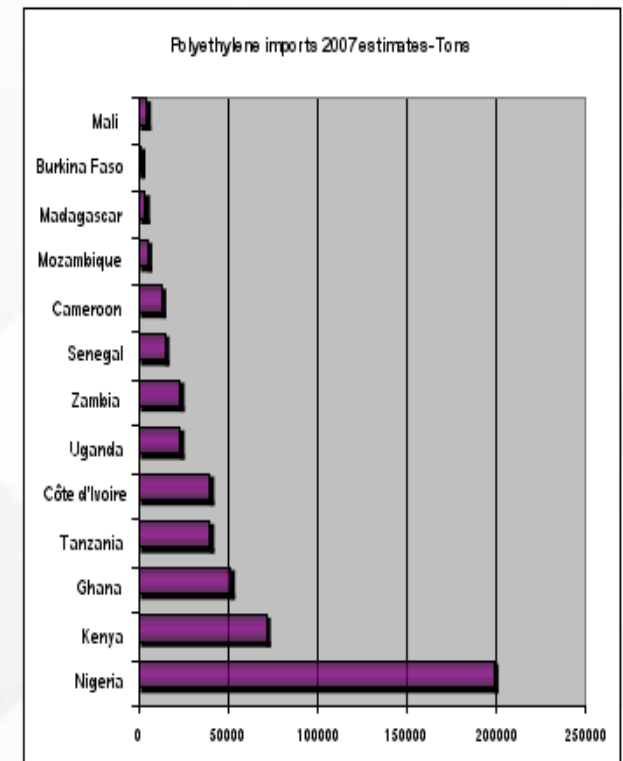
## Characteristics:

- Heavily depends on imports
- Driven by two different market demands oriented towards domestic markets and exports
- Involves SMEs and few international corporations
- Very fragmented



# Import of raw materials

- Plastic granules, metal sheets/rolls, paper master rolls, OPP film master rolls....
- Import taxation differ from country to country. Generally converted products are taxed (i.e. 50 % value in Nigeria for printed laminated)
- Traditionally originating from Europe, but today India, China, South East Asia and the Middle East are taking the lead.
- Some semi-finished and finished packages originate from neighboring African countries depending on logistics, and language (English/French)



# Import of packaging materials

- Commodities use large volume packaging materials, jute and PP woven sacks, shipping cartons and crates



## Can be produced locally if :

- Large quantities are used
- Relatively low capital needed for such manufacturing is readily accessible
- Relatively easily access to such manufacturing technologies exists
- Physical volume of considered package would lead to too high transportation costs

Bananas Ivory Coast: 240000 tons, Cameroon : 257000, Ghana :40000 tons

The packaging demand of current export packaging requirements for bananas is as follow :

- Primary packaging, PE liner 783 tons worth 2,2 million US \$
- Secondary packaging, Carton, 26850 tons worth 22 million US \$
- Tertiary Pallet & strapping, 12300 tons worth 3,8 million US \$

The total for packaging material for banana is respectively 17850 tons or 12,7 million US \$ for Ivory Coast, about the same for Cameroon and 2975 tons worth 2,12 million US\$ for Ghana.

## Specialties correspond to lower volume packaging materials:

- Complex materials requiring sophisticated technologies, manufacturing know how ( PE/Al/Carton/PE), metallization, multilayer technologies...
- The stage of packaging development may be qualitatively rated against the ability of a specific country to produce such specialties locally.



Generally there are few companies producing laminates.

Ghana and Mali are not producing such packaging materials, while Nigeria, Ivory Coast and Senegal do, but to a modest extent, and without the extreme sophistication such as incorporating metalized barrier layer.

Lidding materials for rigid containers are not common place.

Investments are however considered as some entrepreneurs have acknowledge a need to invest in such production.

# Import

Converting machines, packaging machines and equipment:

- All imported
- From India, China, Taiwan, Europe



**Support services** : Package and graphic design, cliché preparation, molds manufacture, repair service, co-packing, testing and certification:

- Present in all large countries in the sub-region.
- Needs a critical mass.
- Hampers the ability of the industry to optimally respond to market demand.



# Export

Supply chains of adequate packaging for export and domestic markets progress together benefiting from each other

Major differences between the demand of :

- large industrial international groups active in overseas exports : e.g.: Bulk and semi bulk shipments for cocoa, or coffee in 25 kg jute bags, mangoes, pineapples, bananas in carton
- Large industrial groups of pre-packed in portion packages: e.g. green beans in small tray from Senegal
- The smaller industrial operators supplying the local market

Significant differences :

- Nigeria mostly driven by its domestic market
- Ivory Coast equally driven by domestic and export market



## Regional exports of packaging material has emerged in West and East Africa:

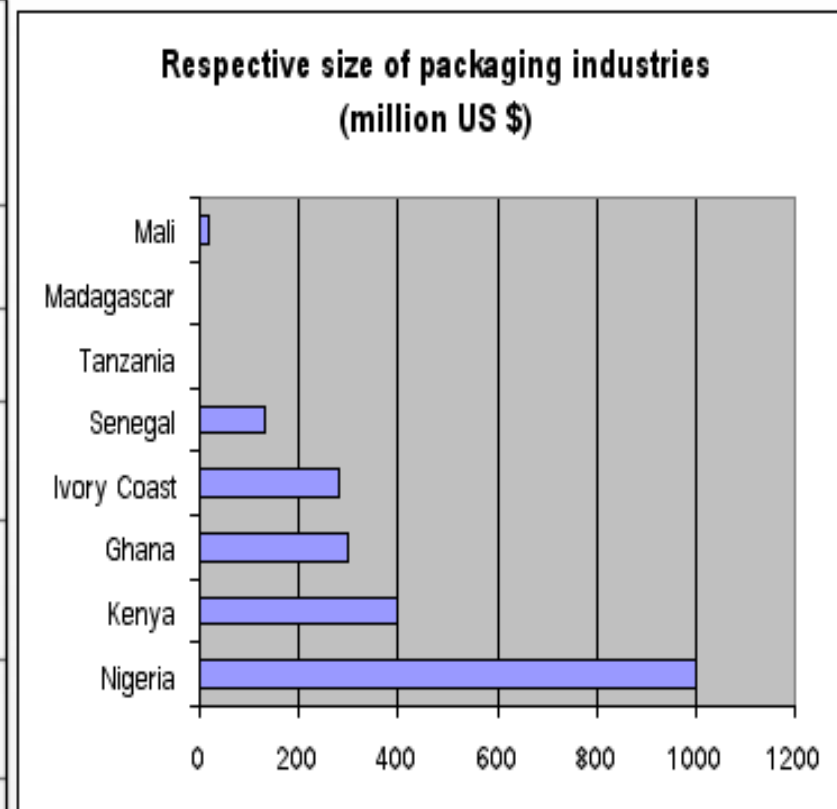
Corresponding to a form of specialization of some countries, i.e.:

- Carton production in Dakar exported
- Bags in Kenya exported to Burundi and Uganda
- Strong experience/domination of South Africa, Kenya, and Tanzania in regional trade in the East.
- Their exports are going primarily to countries that have no real packaging industry in place, i.e. Benin, Burkina, Cameroon, Mali, Malawi, Lesotho.
- Côte d'Ivoire, Ghana, Sénégal, are the key packaging forces in the western region.



# PACKAGING INDUSTRY ESTIMATES OF TURNOVER IN SELECTED SUB SAHARAN AFRICAN COUNTRIES

	MILLIONS US\$	PLASTICS (%)	PAPER AND BOARD (%)	TEXTILE (%)	GLASS (%)	METAL (%)
MALI	18	46	26	18	8	2
SENEGAL	130					
GHANA	300	42	12	33	9	4
IVORY COAST	280	60		18		
KENYA	400	39	40			
NIGERIA	1000					



Source: ITC estimates

## ESTIMATES OF NUMBER OF COMPANIES INVOLVED IN PACKAGING MATERIAL MANUFACTURE IN SELECTED SUB SAHARAN AFRICAN COUNTRIES

	TOTAL	FLEXIBLE PACKAGING	RIGID PLASTICS	PAPER AND BOARD	METAL	GLASS	TEXTILE	INTERNATIONAL CONTENDERS
NIGERIA	110	25	37	45	6 2	6		NAMPACK SMURFIT WIGGINS TETRAPAK
GHANA	50	21		6	4			CROWN MASSILLY
IVORY COAST	28	16		4		0	2	ALCAN HUHTAMAKI CROWN ROSSMAN
TANZANIE	12	4		4	1	1		NAMPACK
SENEGAL	16							CROWN LA ROCHETTE
S. AFRICA								

Source: ITC estimates



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# Packaging supply industries

## Four main types:

- Few international packaging corporations (i.e. Crown, NAMPAK)
- “Conglomerates” with multi-activities in supply services as transport, retail, production of consumer goods (i.e. Lebanese or Indian interests and to some extent Chinese)
- Specialists with regional scope (i.e. AGHA KHAN group of packaging companies)
- Small and medium sized national enterprises.
- Contrast between Eastern Africa (from S. Africa to Kenya which is more developed, advanced and competitive.
- West Africa, is less advanced but catching up quickly (CI, Ghana, Sénégal).

## But:

- All have to import their raw materials
- Most suffer from deficient infrastructures, causing cost up charges
  - Logistics and transportation
  - Utilities: electricity supplies
  - Duties, etc.
  - Lack of packaging technical centers
  - Cost disadvantage (cost of transport and small sized orders)

- Manufacturers are only as good as their private owners/management ability to make money in relatively adverse conditions
- Manufacturers from US and Europe have not focused any real attention to the complex market environment and packaging opportunities offered by added value export opportunities from Africa
- Key international players in the region: South Africa, India, China, S. Arabia have taken over. Europe has no real chance of coming back, especially in Eastern Africa

# Rigid Packaging materials

## Rigid plastic packaging:

- EPS boxes for fresh fish, fruits, vegetables export in Nigeria, Ghana, Senegal and Cameroon. Thermoformed trays and bowls in EPS not yet produced widely
- Injection moulding in thin wall containers, of sophisticated closures or lids not so developed
- PP pails with lids produced by few manufacturers. Beverage crate injection molding available in Nigeria, Ghana, Ivory Coast, Senegal, Tanzania, Cameroon



- Faster development for PET bottles. The pre-forms are seldom produced locally except in Nigeria, Ghana, Cameroon
- HDPE Blow molding for bottles and containers widely available
- Sheet extrusion of solid PP or HIPS for thermoformed pots available in a few countries only.
- Cosmetic tubes in Nigeria, Tanzania, south Africa.

**Note:**

South Africa is by far the most advanced country in the region, with capabilities equivalent to developed countries.

**Key issues:**

- Many injection moulding plants are involved in the production of household articles (plastics)
- Mold design and mold maintenance required

# Flexible Packaging materials

## Flexible plastics packaging:

- PE is the dominant converted plastics raw material. Essentially run by local countries. Excluding second hand or coming from Asia.
- Liners and general purpose bags are mostly produced as well as water pouches in Ghana and Ivory Coast.
- Shrink films and stretch films are manufactured in Nigeria, Ivory Cost, Tanzania and South Africa. Shipment loads do not come in pallets.
- PP film cast for pouches not so developed. OPP films imported and printed locally

- Few companies are producing laminates in Nigeria, Ivory Coast, Senegal and South Africa.
- Several companies for Woven PP sacks and bags operating in Nigeria, Ghana, Ivory Coast, Senegal, Mali.
- Imports from Asia (formal/informal) and Saudi Arabia.
- Multiply laminates imported from the EU.

## Key issues:

- Extrusion coating techniques not practiced and solvent and solventless film lamination practiced in limited cases

# Paper board packaging materials

## Paper and paperboard packaging:

- Paper bags and folding paperboard cartons, including small-scale printers for labels, in Nigeria, Kenya, Ghana, Ivory Coast, Senegal, Tanzania and South Africa.
- Corrugated boxes manufactured in Nigeria, Ivory Coast, Ghana and Senegal, the two last countries exporting to neighbouring countries
- No paper mill in West Africa.
- Imports from Saudi Arabia in the sub region.



## Key issues:

- All paper for packaging is imported
- Sophisticated printing equipment available in a few large-scale printers for good quality labels and folding
- Few invest in water resistant or waxed or laminated corrugated boxes

# Other packaging materials

## Metal packaging:

- No metal tin plate sheeting nor aluminium thin foil manufacturing
- Cans, drums, barrels, containers and closures are the widely used types of steel packaging. Processing units in Nigeria, Ghana, Ivory Coast, Tanzania, South Africa and Senegal
- Aluminium foil and packaging products are imported

## Glass packaging

- Production in Nigeria, Kenya, Cameroon, Tanzania and South Africa and part of the production being exported to neighbouring countries
- Returnable glass bottles are used for the local markets
- No pharmaceutical glass containers and glass jars plants

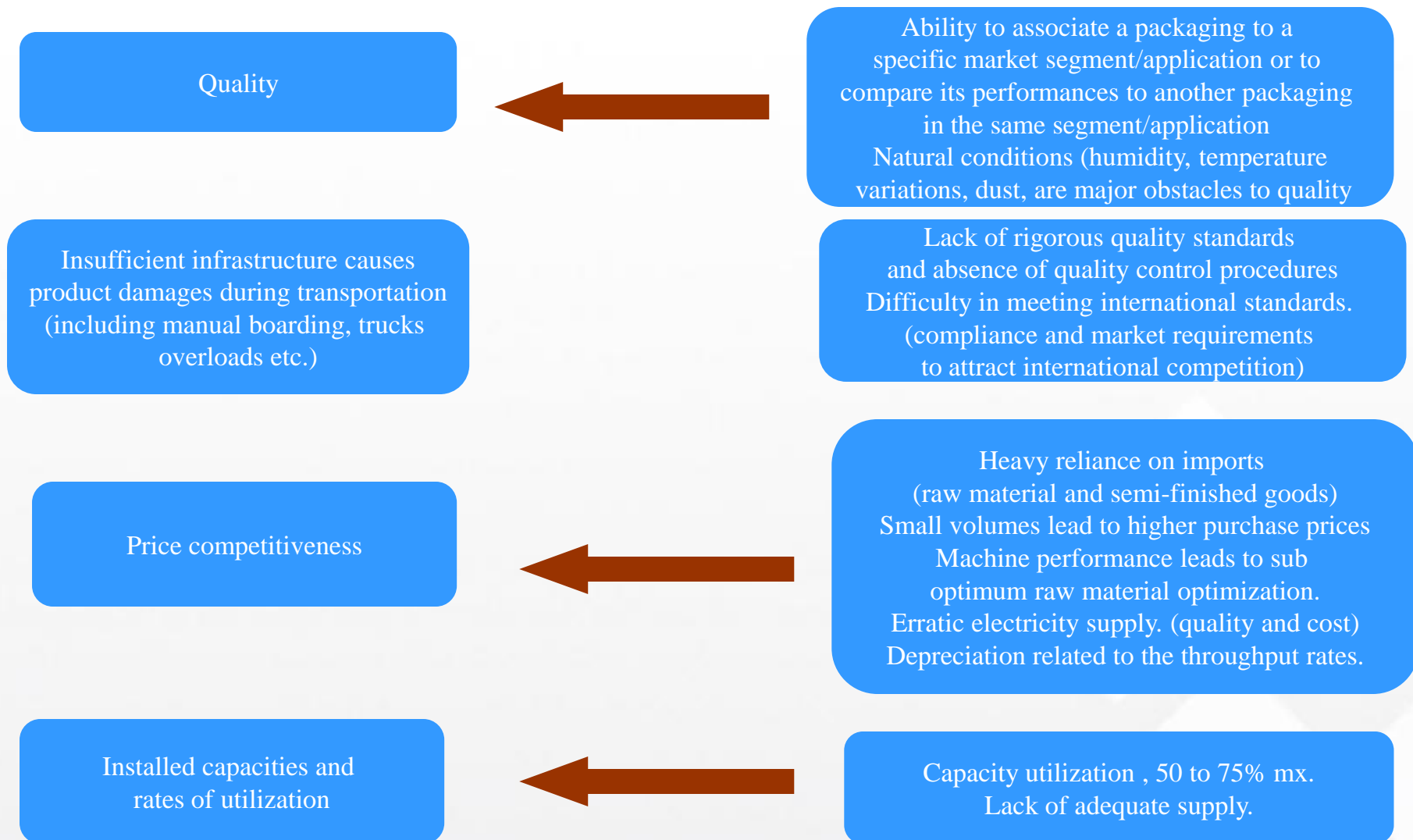
## Wood packaging

- Artisan businesses
- Pallets are generally manufactured and/or repaired locally

## Natural fiber packaging

- Woven jute sacks locally manufactured using vegetable oil as lubricant/plasticizer instead of mineral oil
- Large imports of jute bags from Bangladesh and India.

# Competitiveness of local packaging versus import



# Impact of the international operators on the packaging supply chain

## Globally a positive impact:

- Demand for efficiency and cost optimization raises the standards of the local supplying industry
- Industrial culture settling in
- Hygiene, safety and environmental issues are implemented with global laboratories

## However:

- Import of higher added value packaging (especially in West Africa)
- Local suppliers for rigid plastic containers and closures, polyethylene, woven polyethylene films and bags, paper labels, cartons and corrugated boxes are chosen
- Limited international sourcing is done through joint procurement to achieve higher volumes and better prices
- Larger imports of semi finished goods for further processing, especially for export packaging from West Africa

International end users contribute to the development of local/regional converters able to meet international packaging standards

Food and beverages packers:

- NESTLE
- UNILEVER
- CASTEL-BGI group
- COCA COLA
- DOLE
- SAB
- Others

Non food packers:

- SOAP AND DETERGENTS
- PHARMACEUTICAL INDUSTRY
- TOBACCO
- SHELL
- TEA



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# Small-scale end users

Few operators emerge having capabilities to invest in packaging machinery:

- STRATEC: company venture between Senegalese and Lebanese interests across West Africa offering powder milk and biscuits
- SIVOP, venture between Ivory Coast and Lebanese interests offering cosmetics, personal care and domestic care products

However small-scale users are:

- Extremely fragmented
- Largely depending on the domestic supply for covering their packaging needs
- Constrained to use recovered, second-hand packages when packaging goods are not locally available
- Do not have funds to invest in packaging machinery → opportunity for packaging

# SWOT

## STRENGTHS

- Strong industries have emerged, especially in Kenya, Tanzania, South Africa and Nigeria
- West Africa is catching up: CI, Ghana, Sénégal
- Private investments are taking place in packaging industries in the region, including printing capabilities (EU players are absent)

## WEAKNESSES

- Critical mass: industry players are mostly scattered
- Infrastructure: high cost of transport and deficient utilities
- Few packaging institutes to represent the interest of the industry
- No packaging testing centre in the region, except South Africa and more recently Tanzania

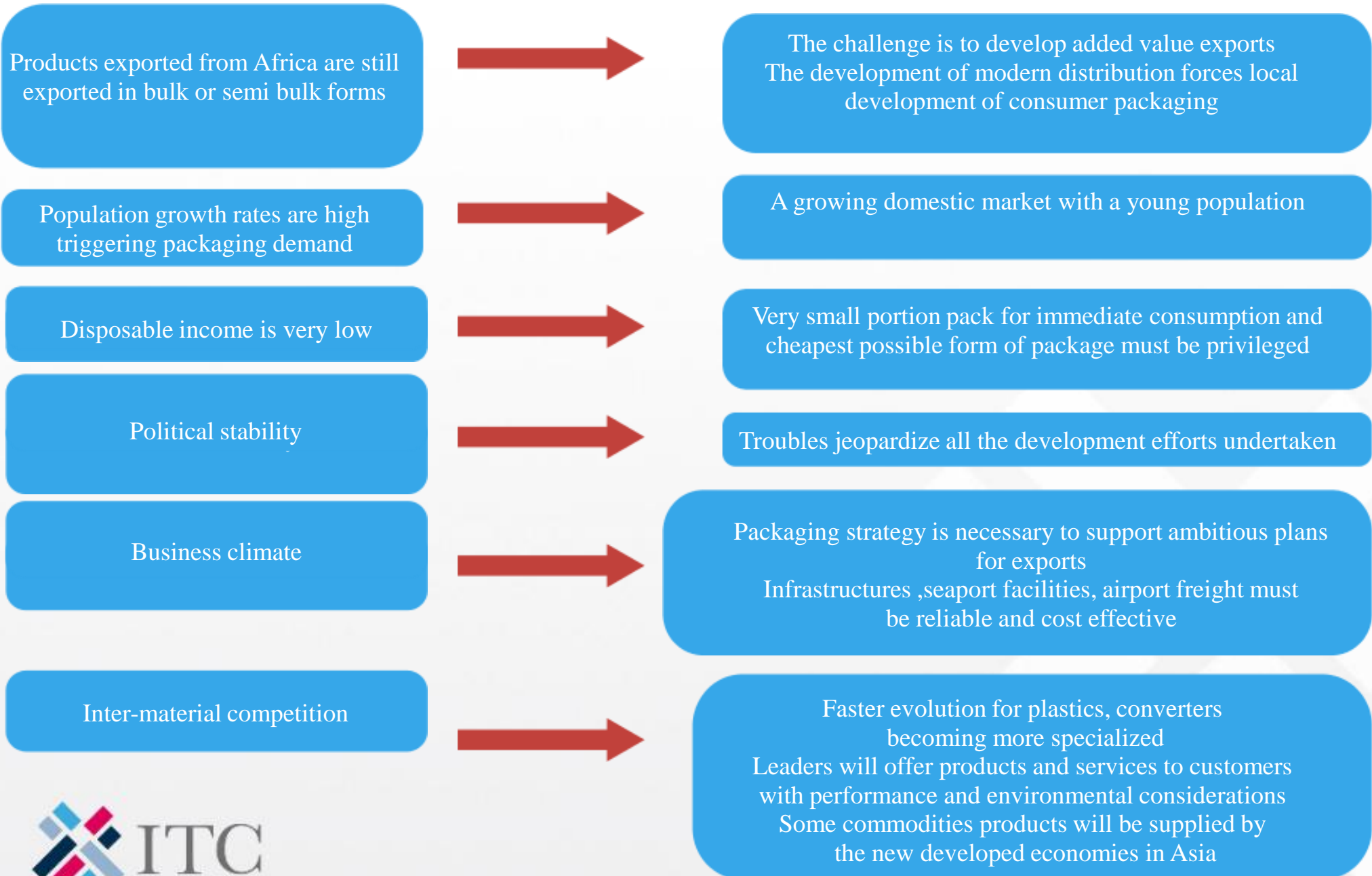
## OPPORTUNITIES

- Large market potential
- Growing added value export packaging
- Growing local demand (especially urban areas/supermarket developments)
- Emergence of international demand (Nesté, Unilever, SAB, etc.) boosts demand for higher added value packaging
- Huge opportunity for affordable packaging machinery

## THREATS

- Suppliers from Asia and the Middle East are taking control
  - Backed up with historical strong pressure of Indian interests
  - Increased presence of China
- Bole formal and informal channels co-exist and disrupt market conditions

# Vision of packaging in the developing economies of West and East Africa



# Most important current issues related to the needs of packaging supply chain

In summary, some of the constraints that have hampered the growth of the packaging industry have been:

- Scale: except in South Africa, Nigeria, Kenya and Tanzania, most other packaging industries in Sub Saharan Africa lack scale/critical size
- Inadequate or old-fashioned technology and machinery

- Raw materials have to be imported whilst infrastructure is not efficient to deal with it economically – Situation aggravated in certain countries with presence of informal trade
- Inadequate skills in packaging technology due to absence of training institutions
- Low level of expertise in packaging design (especially structural design)
- Lack of facilities for testing and certification of packaging
- Lack of facilities and software for packaging development.

# CHINA AS THE “The world manufacturing factory”

Year	1995	2001	2002	2003	2004	2005
Output Value (Billion)	11.52	237.6	253.7	280.6	328.3	370
Five yr Plan	8th	10th	10th	10th	10th	10th
Av annual increase	25,6	8	6.8	10.6	17	12

A horizontal dotted arrow points from the 2001 column to the 2004 column in the 'Output Value (Billion)' row.

## INDIA: Size and importance in 2007

<u>Material</u>	<u>Share(\$ million)</u>	<u>Growth</u>
Flexible	821	High
Plastics-Rigid -semi Rigid	1800 3000 million.	High V.High
Paper & Board	3200	Moderate
Metals	1765	some
Glass	490	some
Other	900	Some

**Average growth rate 15- 18 %**

# Packaging Industry: Ownership, status

## China

- State and Private
- Huge capacities
- Dedicated lines for assured markets
- Large Sino Foreign joint ventures.
- Focus on production



## India

- Private, generally in SME
- Capacities as required
- No benefit of dedicated lines
- Not many joint ventures in large sector
- Focus on development



# PACKAGING - INDIA and CHINA

	<u>CHINA</u>	<u>INDIA</u>
Mkt Size	34,663	6913
Mkt Growth	8.1	10.7
Global Ranking	3	12
Regional Ranking	2	6
Population (million)	1281.7	1056.7
Per capita Consumption \$	27.5	6.49

**By 2050 India along with US will emerge as the second largest economy. By then China will be the Largest**

**Ref-WPO/PIRA report**

**THANK YOU**



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