



UNITED REPUBLIC OF TANZANIA

TANZANIA PORTS AUTHORITY

Opportunities and Challenges for Financing Infrastructure Development

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1. INTRODUCTION

1.1 Definition of Infrastructure

- **Infrastructure is** the fundamental facilities and systems serving a country, city, or other area,
- Infrastructure development of a nation involves building of **new roads, dams, bridges, powerhouses, railways, ports, airports and even network industry such as telecom.**
- Investment in infrastructure has the **capacity to stimulate and enhance the productivity of the economy** in both the short and long term.
- **Traditionally,** infrastructure investments have been financed with **public funds.**

1. Introduction...

1.2 Importance of Infrastructure Investment

Economic Importance of Infrastructure Investment



Better and new roads, dams, bridges, powerhouses, railways, ports, airports and even network industry such as telecom by both the Public and Private Sector.



Economic significance of Infrastructure

Potentially **high multiplier effects** from multi-billion investment projects – boosts AD and jobs

Lack of infrastructure may discourage FDI

Increases the capital stock/productive potential

1. Introduction...

1.2 Importance of Infrastructure Investment...

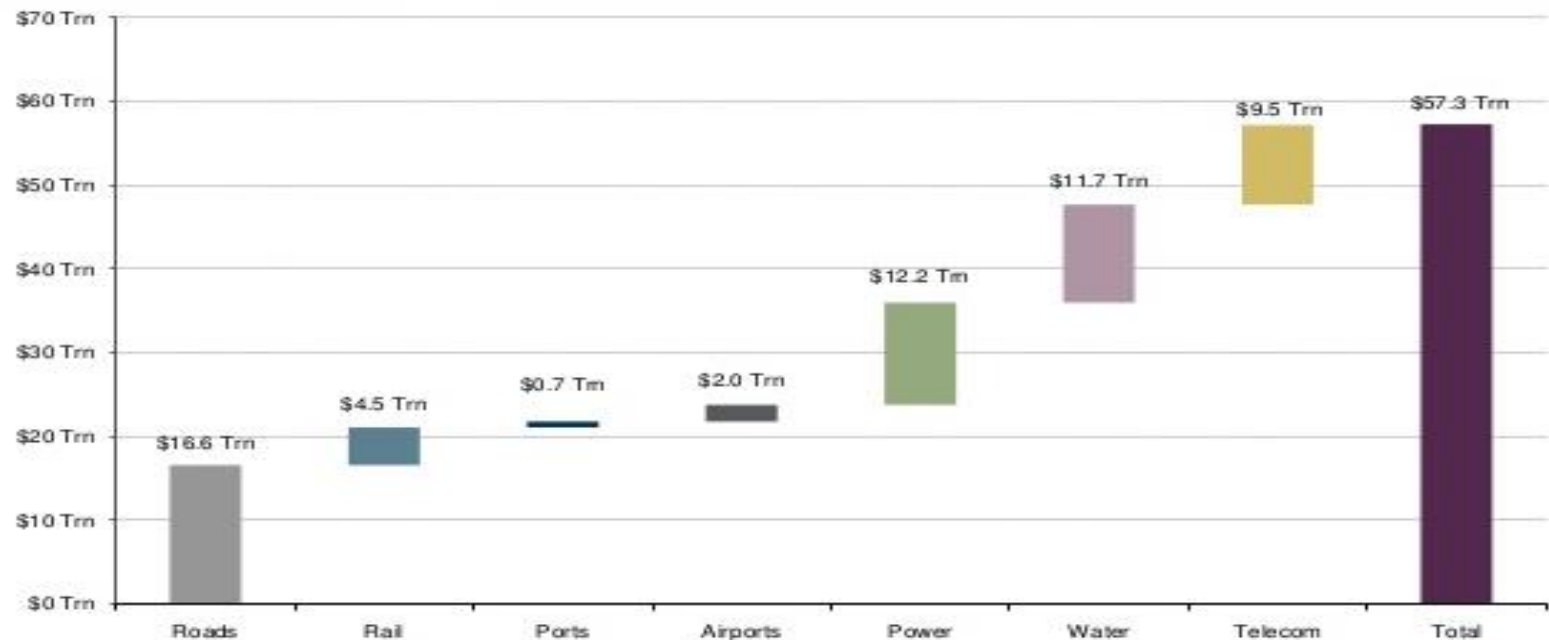
- **Infrastructure is key for job creation and economic growth:**
 - Strengthened infrastructure **reduces production costs, raises productivity** and has long term beneficial impacts on **living standard and employment opportunities**.
 - It also has direct short-term impact on **job** by meeting estimated annual infrastructure investment needs.
 - Longer term, a 1% **rise in GDP growth** from infrastructure spending could create 9 million jobs over 10 year

2. Global Infrastructure Investment

2.1 Global Infrastructure Investment needs

Global Infrastructure Investment Needs, 2013-2030

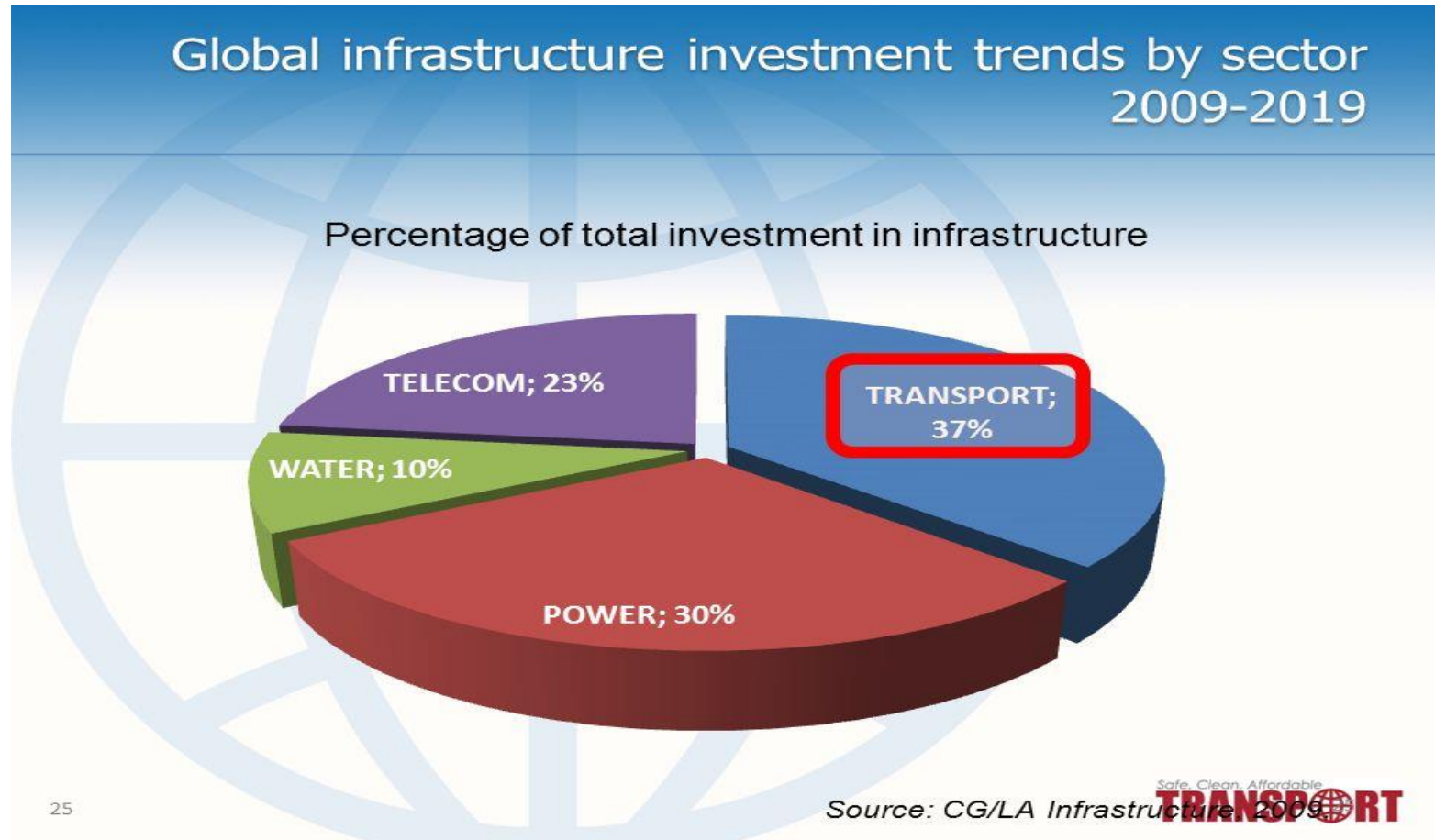
Global Infrastructure Investment Needs, 2013-2030



Source: Infrastructure Productivity: How to Save \$1 Trillion a Year, McKinsey Global Institute, January 2013.

2. Global Infrastructure Investment

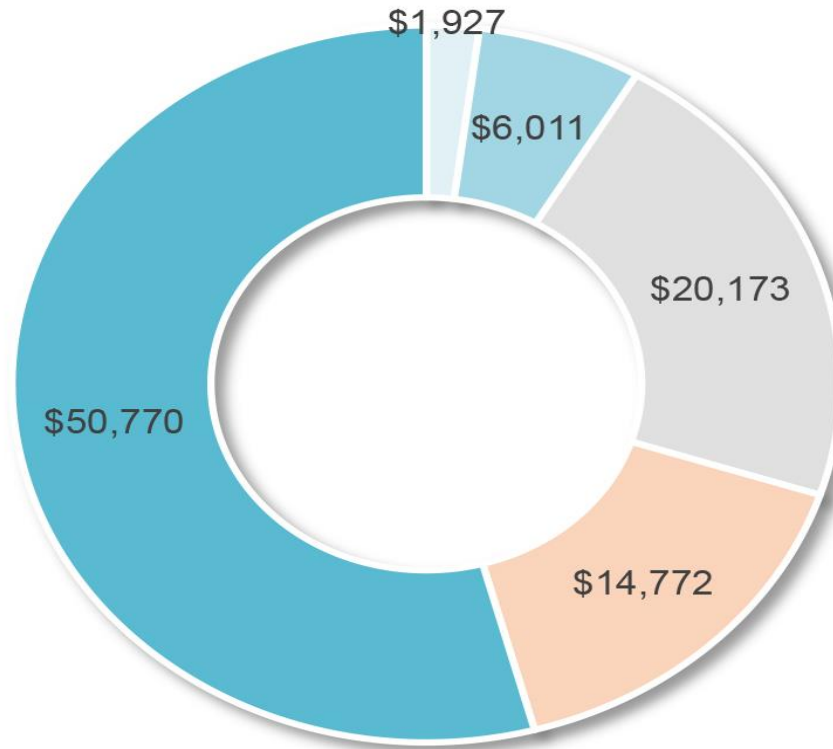
2.2 Global Infrastructure Investment Trends



2. Global Infrastructure Investment

2.3 Global Infrastructure Investment Projections

**US\$ 94t in
infrastructure
needed by 2040**



■ Oceania ■ Africa ■ Americas ■ Europe ■ Asia

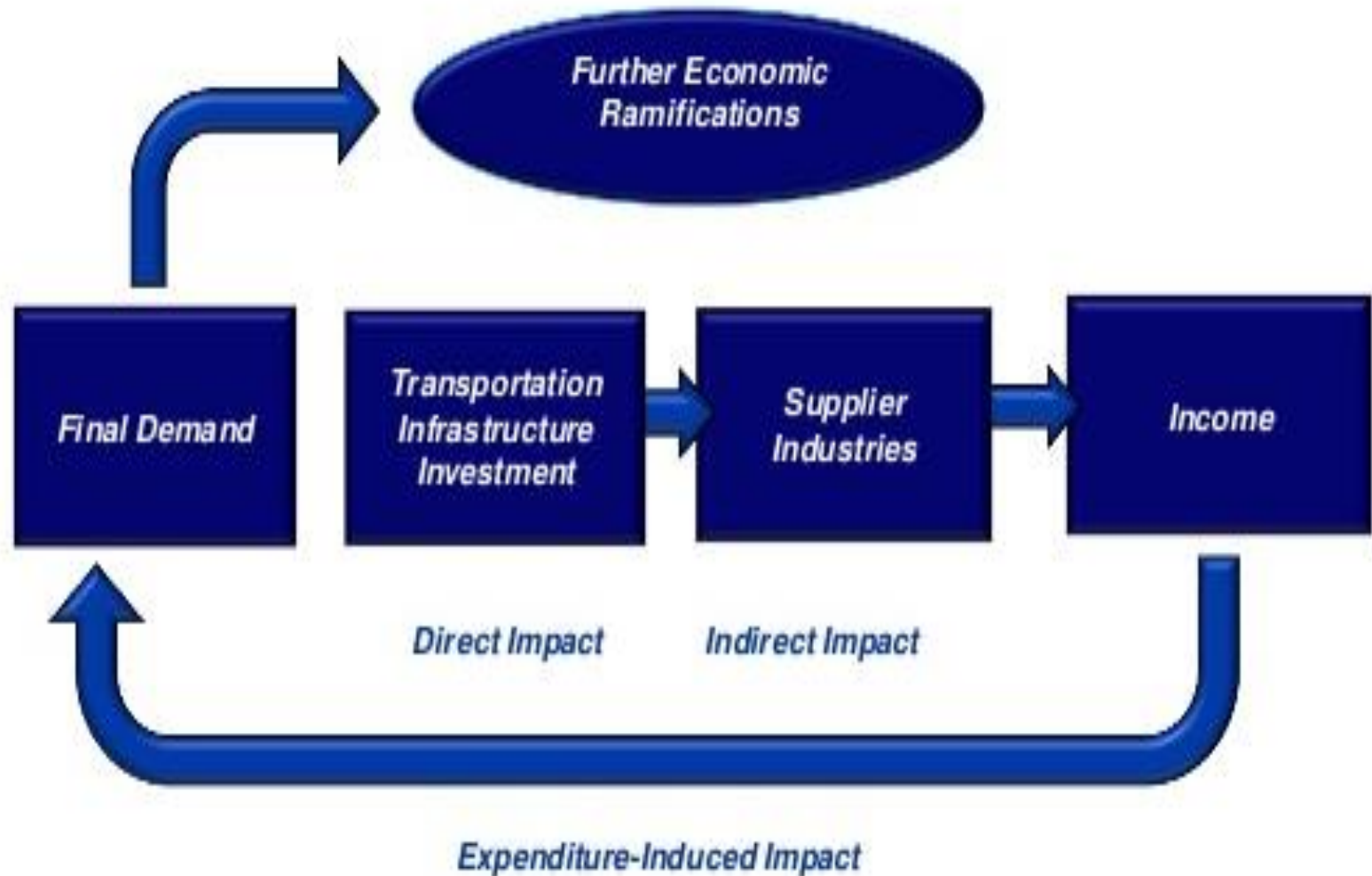
Source: The World Bank Group – the Global Infrastructure Hub

2. Global Infrastructure Investment

2.4 Impact of Infrastructure on Economy

- **Direct contributions** are generated by activity direct associated with **increased capital and construction** spending related to transportation infrastructure.
- **Indirect contributions** are generated by the **increase in activity from the suppliers** of goods and services to direct sectors and its critical suppliers.
- **Induced contributions** are solely due to **changes in income** i.e. from the impacted workers from both the direct and indirect industries spending their additional income

Economic Impact to Industrial Sector by Infrastructure



3. Maritime and Ports Infrastructure

3.1 Marine Transport

- Maritime transport is the backbone of international trade and the global economy
- Maritime transport accounts about 80% of global trade by volume and 70% by value
- All these are carried by sea and handled by ports.
- Global seaborne trade has been increasing by an average of 3.6% annually

3. Maritime and Ports Infrastructure...

3.2 Role of Ports

- 1. Trade facilitation**
 - Over 80% of the trade is sea borne
- 2. Provide services to domestic and land linked countries**
- 3. Transshipment points on sea routes.**
- 4. Catalyst of value adding activities such as SEZ, EDZ, etc.**
- 5. Logistic points for global trade**

3. Maritime and Ports Infrastructure...

3.2 Role of Ports...

5. Fishing industry support systems

6. Platform for Cruise Tourism

7. Water fronts

- Marinas**
- Recreational Areas**

9. Environmental Enhancement

10. Provide employment opportunities

3. Maritime and Ports Infrastructure...

3.3 Management of Port Operations

- **The Statutory Powers of a National Port Authority:**
 - ✓ **Investment:** Power to approve proposals for port investments in amounts above a certain figure.
 - ✓ **Financial policy:** Power to set common financial objectives for ports
 - ✓ **Tariff policy:** Power to regulate rates and charges as required to protect the public interest.
 - ✓ **Labour policy:** Power to set common recruitment standards, a common wage structure, and common qualifications for promotion; and the power to approve common labour union procedures.
 - ✓ **Licensing:** When appropriate, power to establish principles for licensing of port employees or agents.
 - ✓ **Information and research:** Power to collect, collate, analyse, and disseminate statistical information on port activity for general use,
 - ✓ **Legal:** Power to act as legal advisor to local port authorities

3. Maritime and Ports Infrastructure...

3.4 Functions of National Port

- **Landlord for private entities** offering a variety of services.
- **Regulator** of economic activity and operations, marine safety, security, and environmental control.
- **Planning** for future operations and capital investments.
- **Operator** of nautical services and facilities.
- **Marketer** and promoter of port services and economic development.
- **Cargo handler and storer.**
- **Provider of ancillary activities.**

3. Maritime and Ports Infrastructure...

3.5 Investments in Ports Infrastructure

- Investments may concern the construction of new infrastructure as well as upgrading or redeveloping existing infrastructure.
- Financing approaches, it is important to distinguish among investments in basic port infrastructure, operational port infrastructure, port superstructure, and port equipment.

3. Maritime and Ports Infrastructure...

3.6 Opportunities for investments

1. Maritime access:

- capital and maintenance dredging of entrance channels or rivers,
- breakwaters, that protect ships in ports, and sea locks

2. Basic port infrastructure

- Infrastructure and facilities for the provision of transport-related port services, such as berths used for the mooring of ships, quay walls, jetties and floating pontoon ramps in tidal areas, internal basins, backfills and land reclamation.

3. Equipment and superstructure

- Surface arrangements (such as for storage), fixed equipment (such as warehouses and terminal buildings) as well as mobile equipment (such as cranes) located in a port for the provision of transport related port services.

4. Infrastructure for smooth transport flows within the port area (Road, and rail infrastructure inside the port, as well as parking lots)

3. Maritime and Ports Infrastructure...

3.6 Opportunities for investments

- 5. Energy-related infrastructure**
- 6. Road and Rail transport connection from port to main line**
 - Road and Rail infrastructure from maritime terminals in ports to the main network
- 7. ICT/digital infrastructure for efficient port, secured port & hinterland operations**
- 8. Intermodal/multimodal terminals in the port area and/or dry ports outside the port area**
- 9. Sites for port-related logistic and manufacturing activities in the port area (Logistic Parks, SEZ etc.)**
- 10. Infrastructure for reducing the environmental footprint of port and shipping operations**

3. Maritime and Ports Infrastructure...

3.7 Potential Value Created by Port Infrastructure

Type of port infrastructure	Potential economic value creation	Potential societal value creation
Maritime access	Reduced unit shipping costs in case of improved maritime access (for larger ships). Reduced risk of catastrophes and port blockages if the works improve resilience	Increased trade as a result of reduced import/export costs; increased safety. Reduced environmental footprint and better air quality if investments enable deployment of more efficient and state-of the art ships and/or a shift of cargo flows to the port closest to the cargo destination.
Basic port infrastructure	Reduced costs for present (and future) port users (shipping lines, tenants and shippers) in the port	Reduced environmental footprint if investments enable deployment of more fuel-efficient ships and/or a shift of cargo flows to the port closest to the cargo destination

3. Maritime and Ports Infrastructure...

3.7 Potential Value Created by Port Infrastructure...

Type of port infrastructure	Potential economic value creation	Potential societal value creation
Equipment and superstructure	Value for port users through more capacity and/or higher productivity	Reduced environmental footprint if investments enable deployment of more fuel-efficient ships and/or a shift of cargo flows to the port closest to the cargo destination
Infrastructure for smooth transport flows within the port area	Value for port users through lower generalised transport costs and efficiency	Reduced pollution through more efficient operations and/or more use of environmentally friendly transport modes
Energy-related infrastructure	Value for port users through lower production costs	Reduced emissions. Increased energy efficiency and energy independence

3. Maritime and Ports Infrastructure...

3.7 Potential Value Created by Port Infrastructure...

Type of port infrastructure	Potential economic value creation	Potential societal value creation
Road and Rail transport connection from port to main line	Value for port users through lower generalised transport costs	Increase of trade due to the extension of hinterland. Increased use of environmentally friendly transport modes
ICT/digital infrastructure	Value for port users through lower generalised transport costs	Reduction of emissions due to better utilization of assets
Intermodal/multimodal terminals	Value for port users through lower generalised transport costs	Increase of trade due to the extension of hinterland.
Sites for logistic and manufacturing activities	Value for (future) port tenants that benefit from a location in a port cluster	Support regional development through facilitation of investments in manufacturing and logistics

4. Challenges for Financing Ports Infrastructure

4.1 Need for Heavy Investment

- **Interrelation of investment categories**
 - The distinction of port infrastructure investment facilitates more detailed insights into financing challenges and investment needs.
- **Drivers of infrastructure investments in ports**
 - Investments in infrastructure are needed for ports to enhance their efficiency, to address the challenges of the growing and changing needs of production and supply chains.
 - The challenges driving such investments include:
 - Increased size and complexity of the Maritime fleet
 - Growth of volumes handled in ports
 - Pressure towards urbanisation of coastal zones
 - A strong digitalisation of virtually all parts of the economy
 - Abrupt rise in e-commerce
 - Various external factors create a need for investments in port infrastructure.

4. Challenges for Financing Ports Infrastructure

4.2 Investments in Greenfield

Funding large infrastructure investments in greenfield port projects is more risky because of certain complicating factors, including:

- The large proportion of necessary equity contributions due to the high risk associated with long construction and payback periods.
- The difficulty of projecting future traffic volumes.
- The capital-intensive nature of the investments.
- The continuing risks associated with operations, such as a refusal of requests for tariff adjustments, changes in tax policy, or introduction of new handling techniques that make existing facilities obsolete.

4. Challenges for Financing Ports Infrastructure

4.2 Private sector participation

The private sector evaluates its participation in port infrastructure and superstructure projects based on the following elements:

- Expected yield.
- Adequate debt/equity financing structure.
- Strong sponsorship.
- Solid legal contracts.
- Transparent legal framework.
- Fair and open bidding procedures.
- Credible feasibility analyses (technical, institutional, financial, economic, and environmental).

4. Challenges for Financing Ports Infrastructure

4.3 Other Challenges

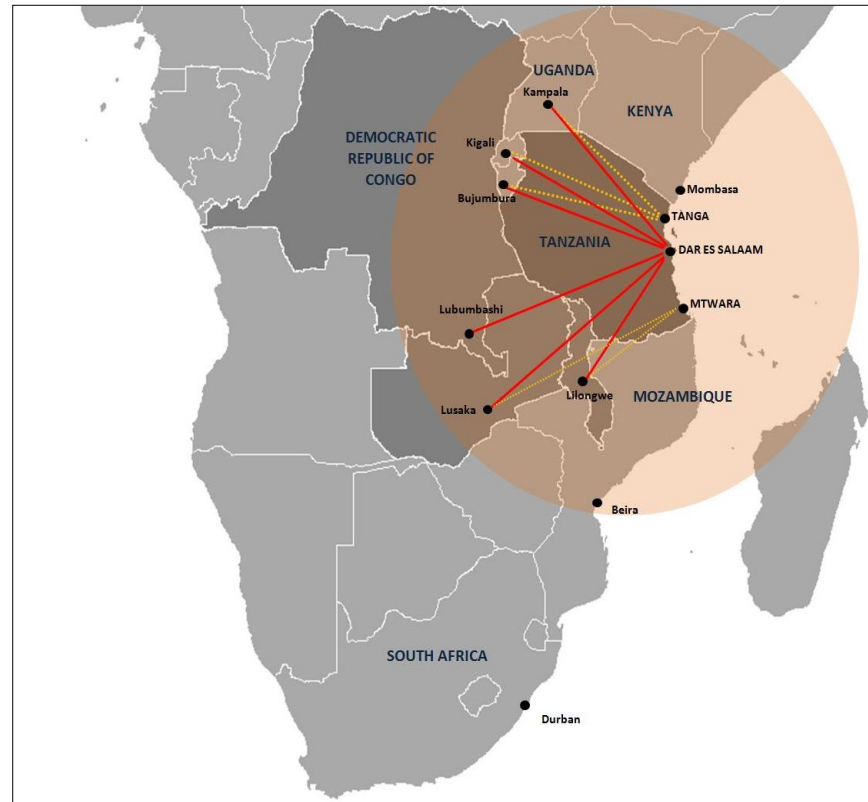
- High level Human capital needs
- Lack of common policies and legislations among member states within the Region
- Lack of integrated inter modal systems.
- Unaligned stakeholder interests, needs and strategies.

5. Investment Profile in TPA Ports

5.1 Establishment

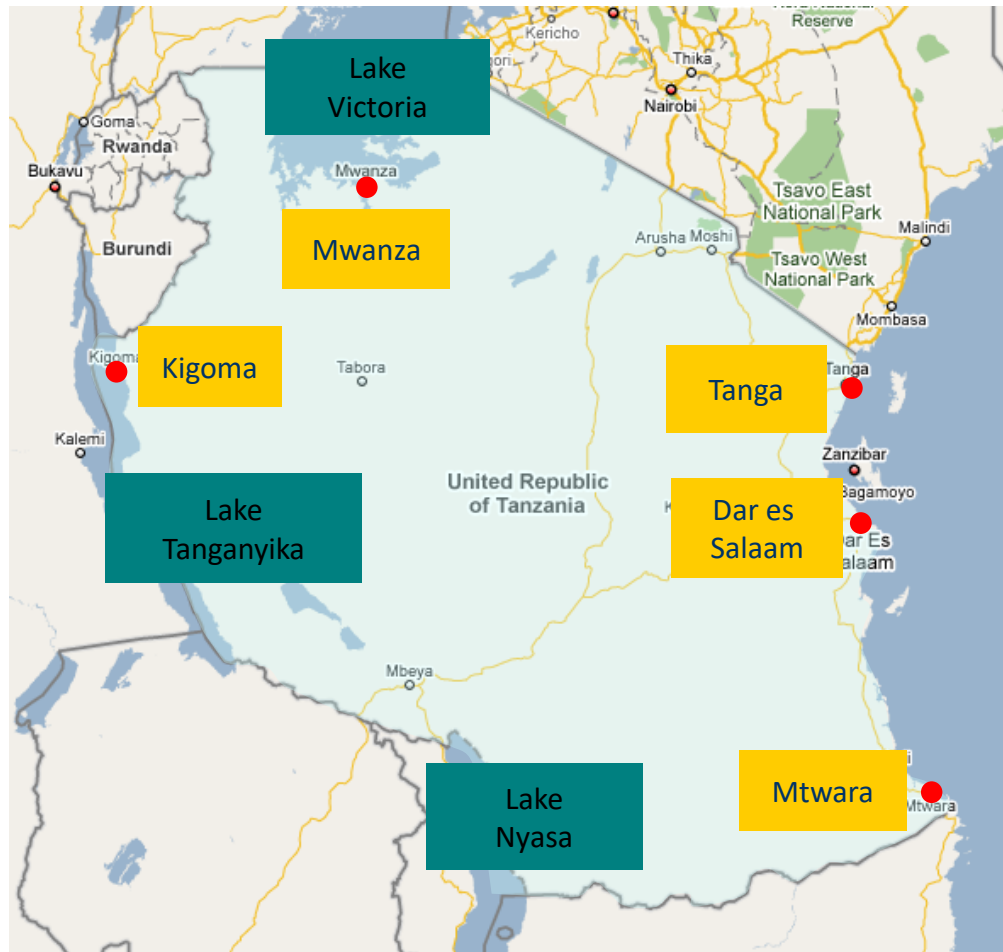
1. TPA was established by the Ports Act No. 17 of 2004 as a corporate landlord port authority.

- Saves 8 countries - >250 mln. people. (Tanzania, Malawi, Zambia, Mozambique, DR Congo, Burundi, Rwanda and Uganda)
- Ocean Coastal Line 1,424 KM



5. Investment Profile in TPA Ports

5.2 Ports Managed by TPA



- **3 major sea gateway ports** (Dsm – handles over 90% of all trade; Tanga port and Mtwara port)
- **7+ minor coastal ports**
- **10+ inland waterway ports**
(6 on Lake Victoria, 2 on Lake Tanganyika and 2 on Lake Nyasa)

5. Investment Profile in TPA Ports

5.3 Projected Trade Growth

Projected Trade Growth – PMP study 2009.

Port (Actual growth 2010-2014 14.5%/yr.)	Actual 2013/14 (mln. throughput)	Forecast 2028 (mln. throughput)	
		High Forecast ¹	Low Forecast ¹
Dar es Salaam	14.550	41.5	22.65
Tanga	0.579	4.6	1.45
Mtwara	0.356	24.8	2.40
Lake Victoria	0.245	2.05	0.60
Lake Tanganyika	0.088	3.25	1.70
Lake Nyasa	0.006	1.40	0.30

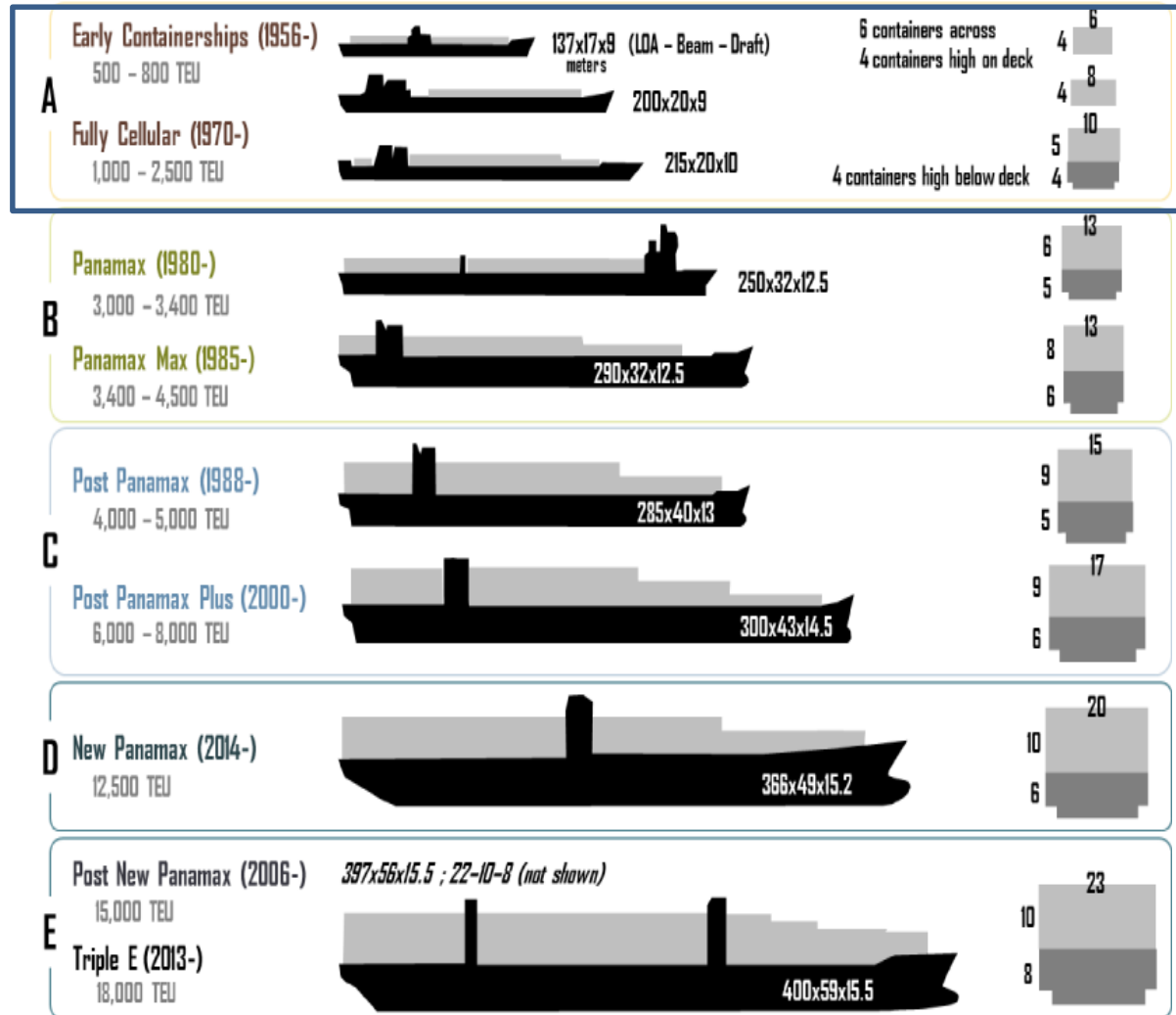
Source: ¹ Tanzania Ports Master Plan 2009

5. Investment Profile in TPA Ports

5.4 Investment to meet Changing Technology

Changing Shipping Technology

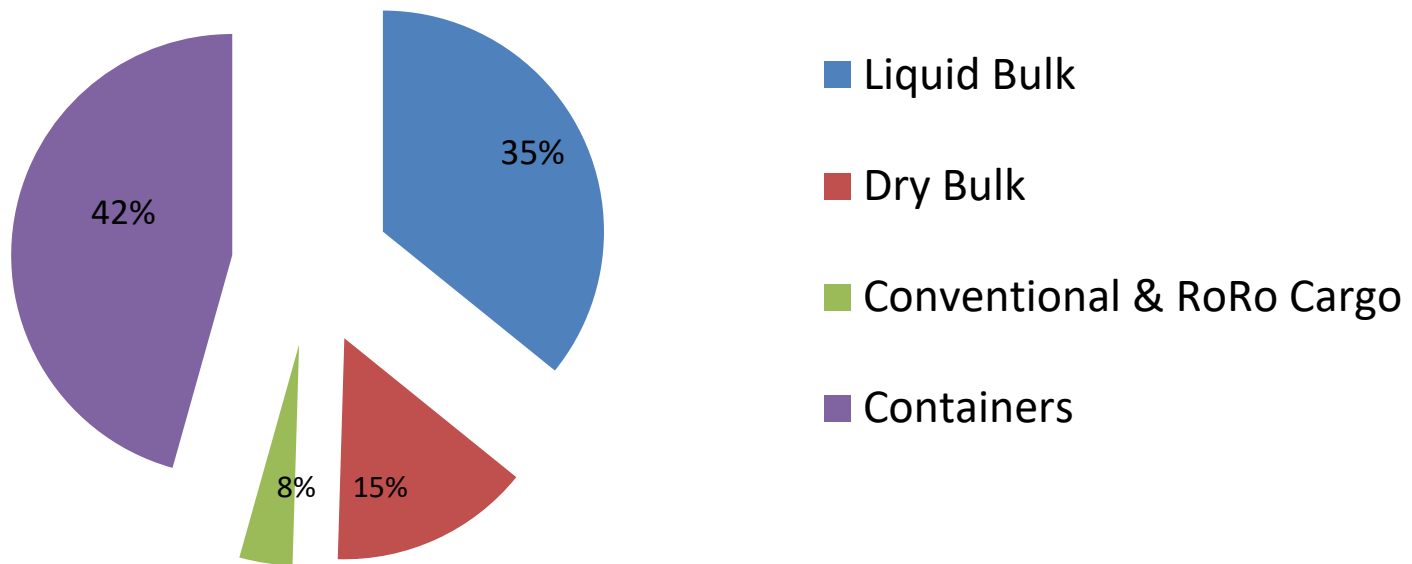
- Increasing vessel size
(economies of scale)
– Triple E [2013]



5. Investment Profile in TPA Ports

5.5 Investment towards Terminal Specialization

Specialized Terminal - In tonnage wise, of all the cargo packages, containerized one dominates, thus, a need to skew towards increasing capacity in **specialized container terminals.**



5. Investment Profile in TPA Ports

Example: Area to Increase Terminal Specialisation
Investment packages

Development of additional Container Berths (12 - 15)-



5. Investment Profile in TPA Ports

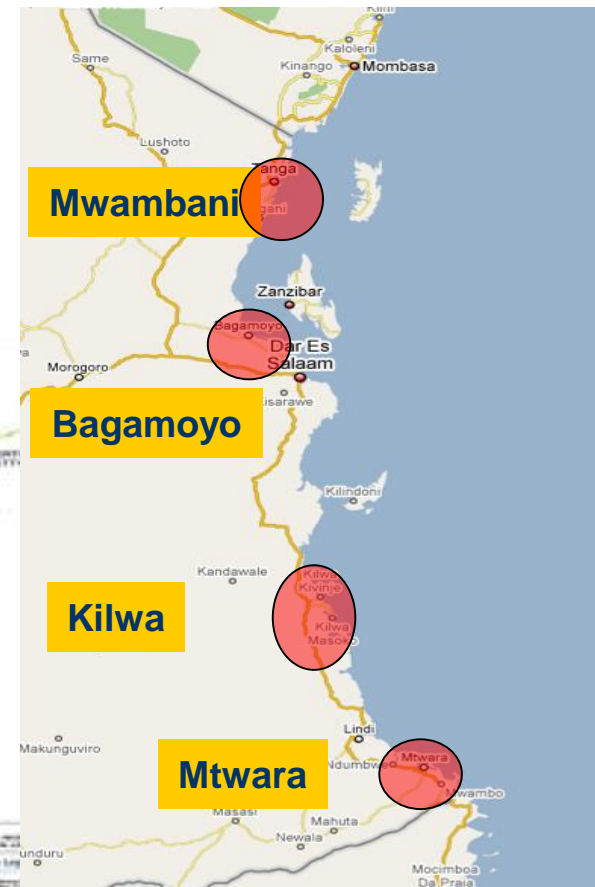
Example: Area to Increase Terminal Specialisation
Investment packages...

- ✓ *Dredging and Widening of Entrance Channel and Turning Basin*
- ✓ *Installation of conveyor systems and Expansion of silos*
- ✓ *Development of Floating Dock*
- ✓ *Procurement of various equipment*
- ✓ *Enhancing ICT systems for cargo and vessel operations*

5. Investment Profile in TPA Ports

5.6 Potential Areas for Ports Investment

Development of New Port at Mwambani bay, Tanga



5. Investment Profile in TPA Ports

5.6 Potential Areas for Ports Investment...

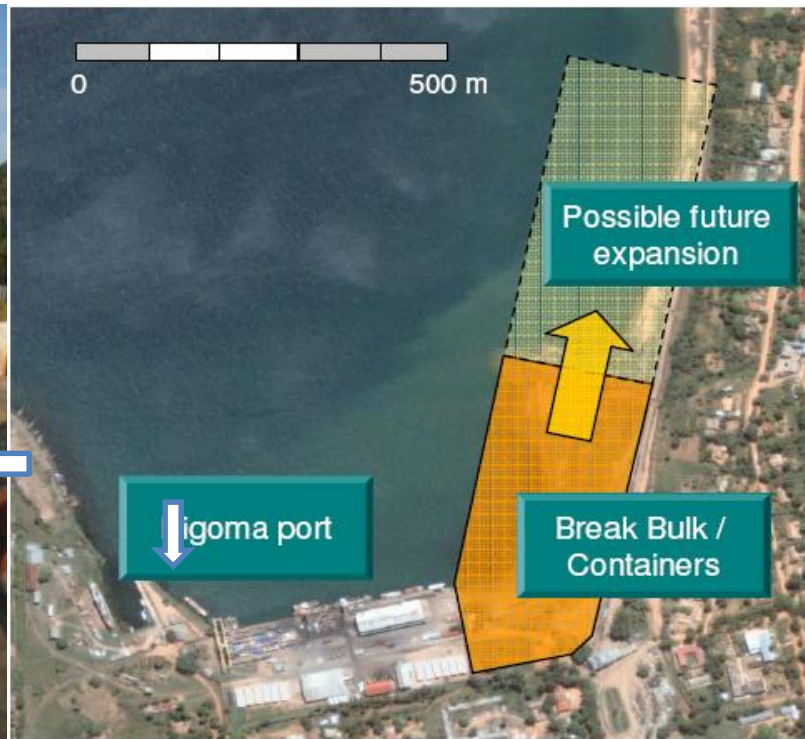
Expansion and Modernisation of Lake ports



5. Investment Profile in TPA Ports

5.6 Potential Areas for Ports Investment...

Modernisation of Kigoma port in Lake Tanganyika



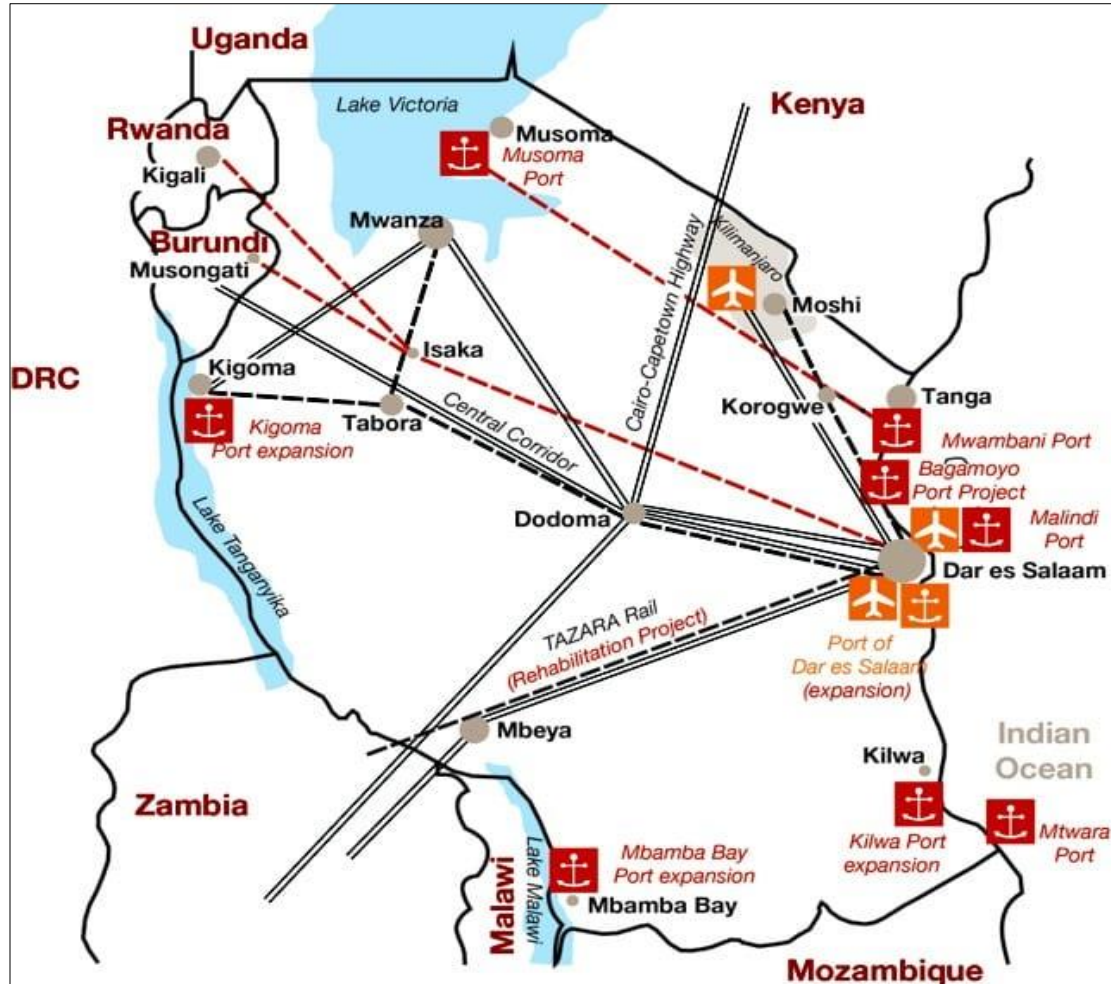
6. Future Prospects/ What is Opportunity Envelope

6.1 Future Prospects

- Economic growth of the SADC Region using Ports –
 - GDP's expected to grow between 6% – 9%.
- Political stability in the landlinked countries.
 - i.e. DRC Congo, Rwanda and Burundi
- Development of mining Industries in the region:
 - Copper mining in Zambia & DRC
 - Nickel mining in Tanzania
- Major Expansion program of local industries
 - Mushroom Industries
- Hinterland logistics improvements –
 - SGR Central Railway
 - Traffic diverted to our ports

6. Future Prospects/ What is Opportunity Envelope

6.2 Future Infrastructure Development



7.Concluding Remarks

- Investment in infrastructure is necessary to enhance ports capacity for Regional development and Industrial growth.
- Prosperity of SADC Region depends on trade and Industrial growth is facilitated by efficient ports.

7. Concluding Remarks...

- The competitive edge of the Infrastructure will be the ability to deliver a seamless service throughout the supply chain.
- Expansion of port capacity should always be in line with the expansion of inter-modal infrastructure.
- Success of the Port depends much on collaboration among member states and port stakeholders (Port Operators, Government Agencies, Shipping Agents, Clearing and Forwarding Agents)

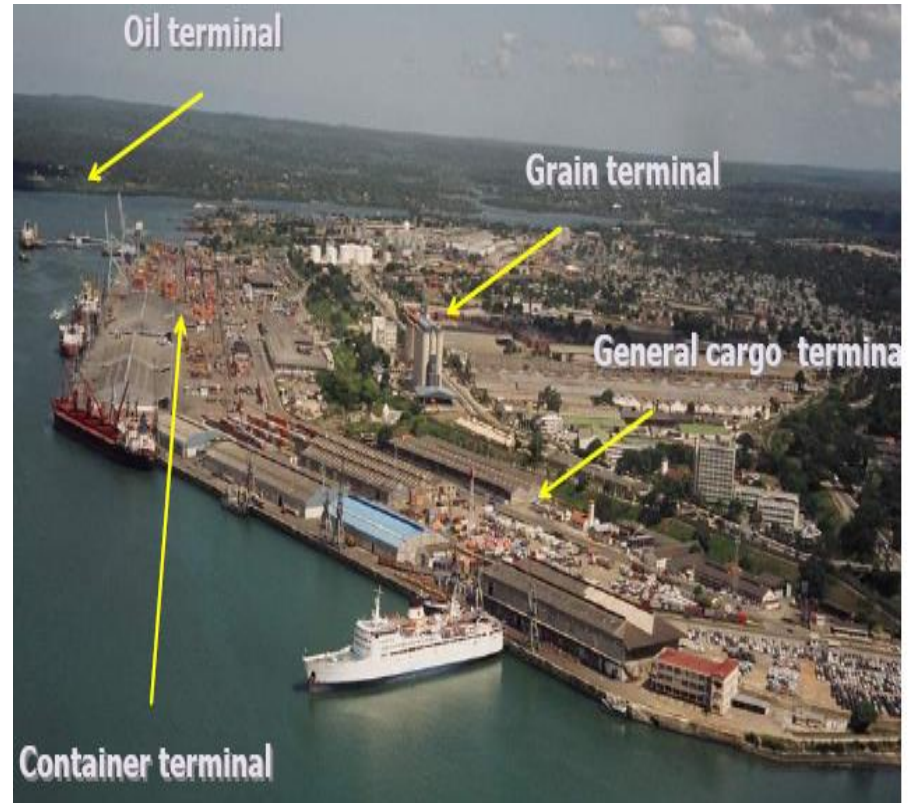
7. Concluding Remarks

- Infrastructure problems in developing nations are complex and numerous. The demand surpasses the supply for infrastructure and finance that will stimulate rapid provision is not available. This is where the opportunity for Public Finance Initiative (PFI) lies.

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TANZANIA PORTS AUTHORITY

For Support of Regional Trade and Logistics



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