



**FUTURE CHALLENGES OF  
THE NEW URBAN WORLD**

**RABAT, MOROCCO  
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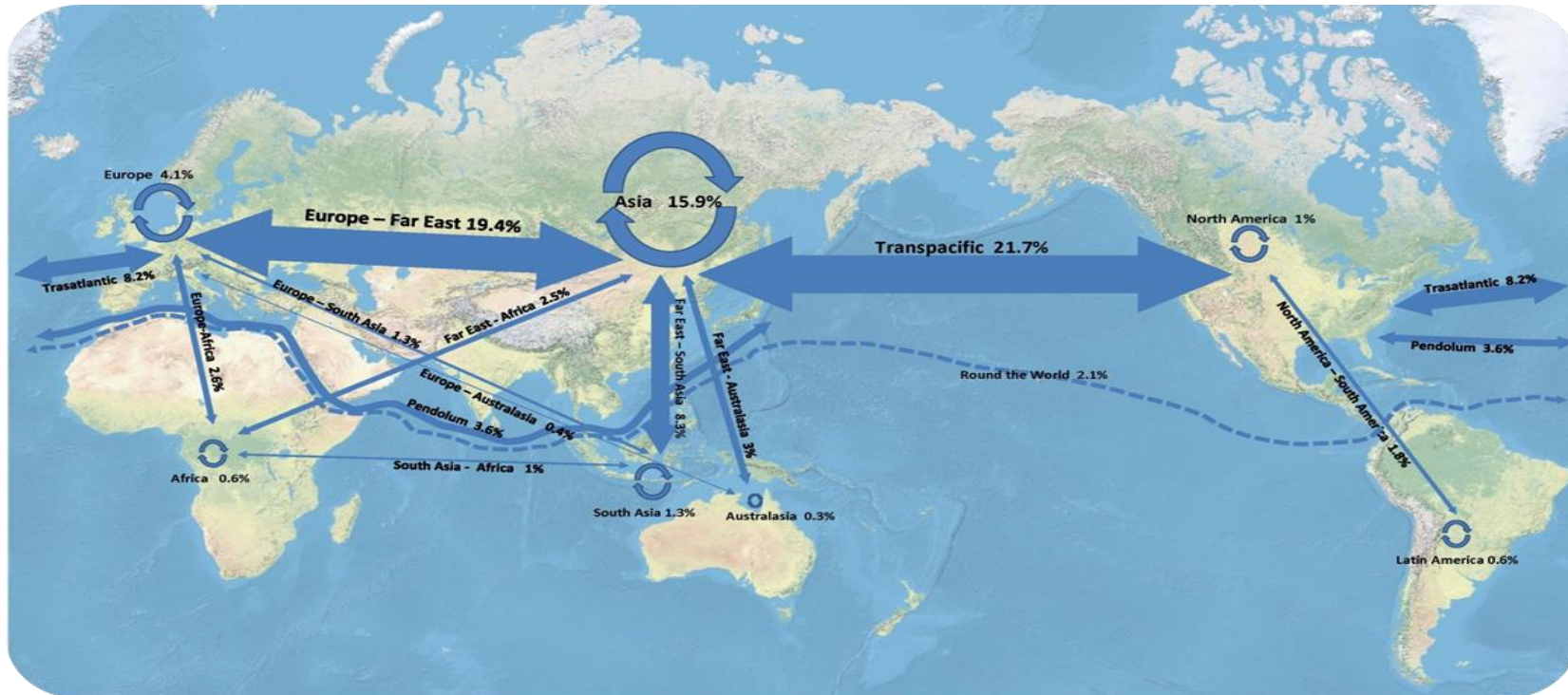


***New Frontiers for Growth: Fundamental Determinants  
for African Port Investments***

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# Global maritime trade

Due to infrastructure deficits in energy, transport and telecommunications, the World Bank estimates that Africa's economic growth is 2% lower than it could be



## Objectives:

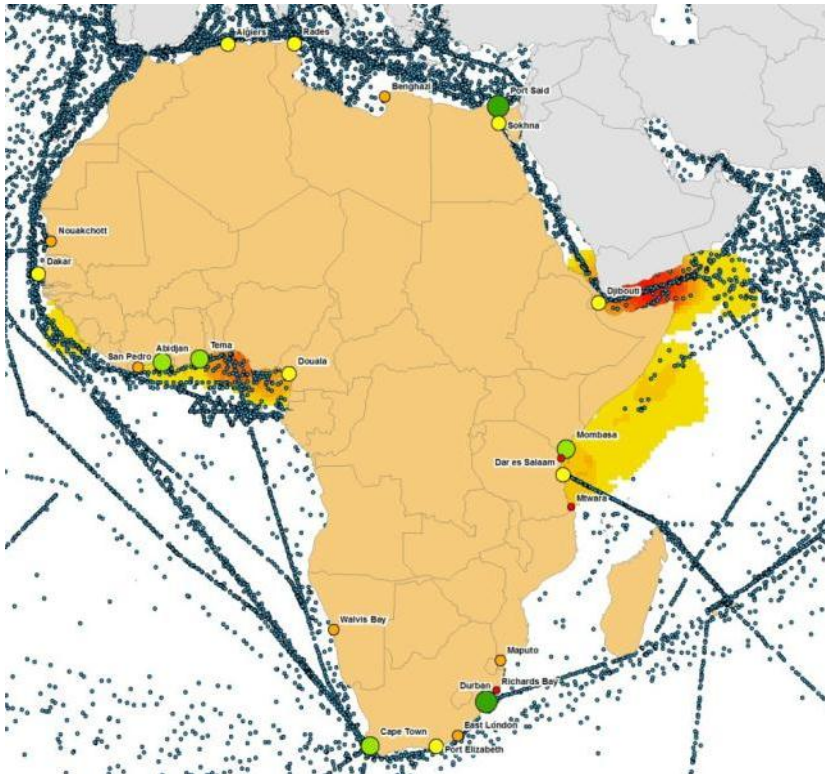
1. To evaluate the investment attractiveness of Africa ports
2. To estimate the financial implementation of Port Tangier Med

## LITERATURE REVIEW: EFFICIENCY

- Limao and Venables (2001) – 10% increase in transport costs reduces trade volume by 20%
- Radelet and Sachs (1998) – doubling shipping costs slows GDP growth by 0.5%
- Clark, Dollar, Micco (2001) – port inefficiency increases distance by 60%
- Wilson, Mann, Otsuki (2003) – efficiency improvement in ports has greater impact than customs improvements and use of e-commerce
- Hummels (2001) – inventory costs due to transport delays equivalent to 0.8%/day of delay of the value of the goods being delivered
- Kent, Fox (2004) – assess impact of port inefficiency on welfare – port inefficiency, when mitigated, induces GDP growth by 0.47%
- Djankov, Freund and Pham (2006) – each additional day required for a shipment imposes “extra” economic distance of 70 km per day
- Arvis et al. (2010) – demonstrate that over 50% of total land transport time from port to hinterland cities in landlocked countries in Africa is spent in ports

# Africa Maritime Trade

60% of Africa’s economies, such as Ethiopia, Mozambique, Tanzania, Ghana, Zambia, and Nigeria are expected to grow at a rate of between 7 and 8% within the next 5 years. (IMF, 2011)



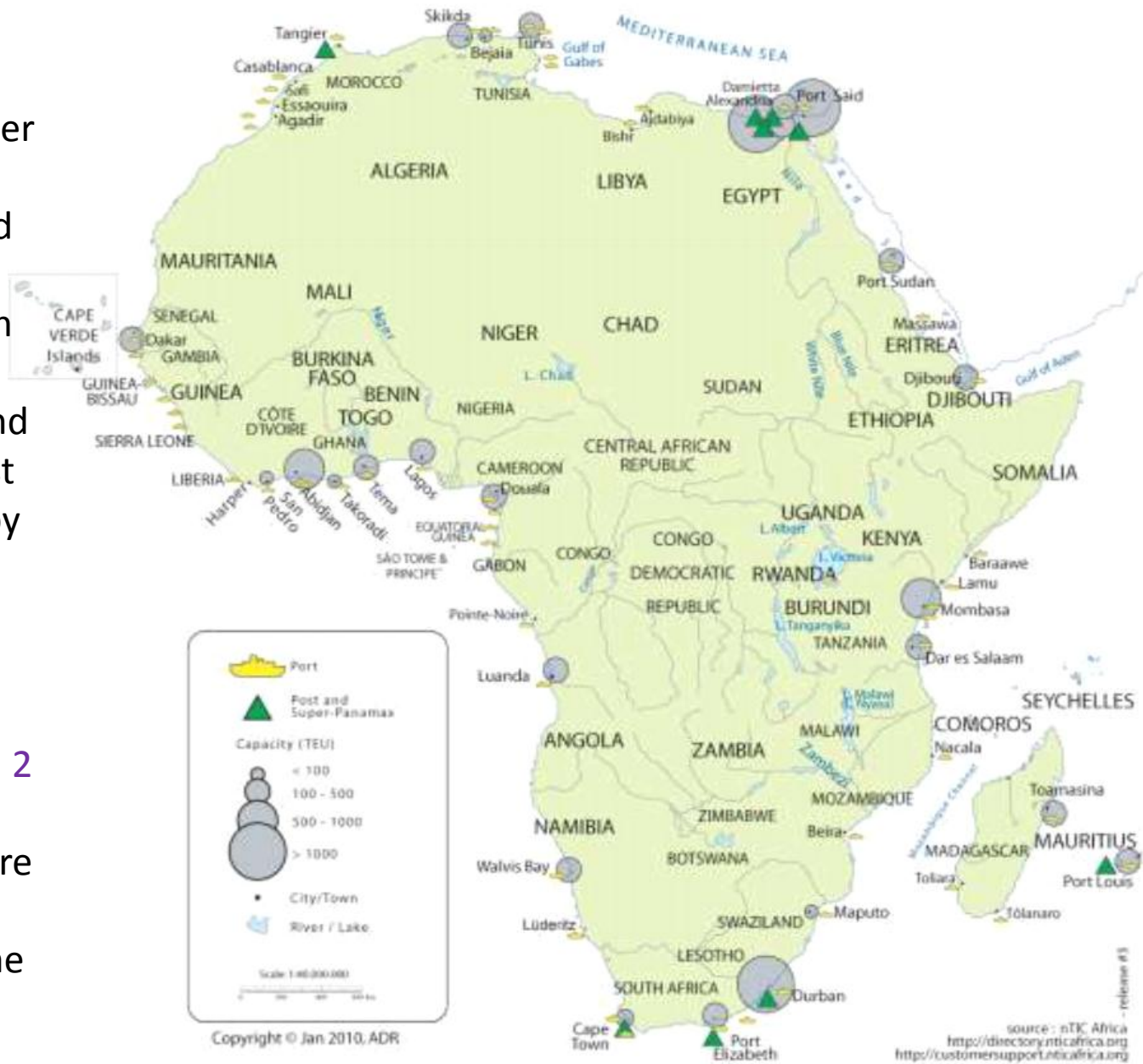
Africa accounts for 6% of global container trade. About 95% of Africa international trade passes through ports.

China plays a leading role as the major commercial partner for countries including Republic of Congo (40%) and Nigeria (50%). Asia-Africa trade climbed to \$304 billion in 2010.

Trade between the Asian and African continents is forecast to soar to over \$1.5 billion by 2020.

The international standard dwell time is 7 days or less, but in Africa on average a container spends more than 2 weeks in port.

Handling charges in the entire continent are twice those typically applied for the same service in other parts of the world.



source: nTK Africa  
<http://directory.ntk.africa.org>  
<http://customersupport.ntk.africa.org>

Unbalanced trade/shipment, as 85% of containers are shipped empty.

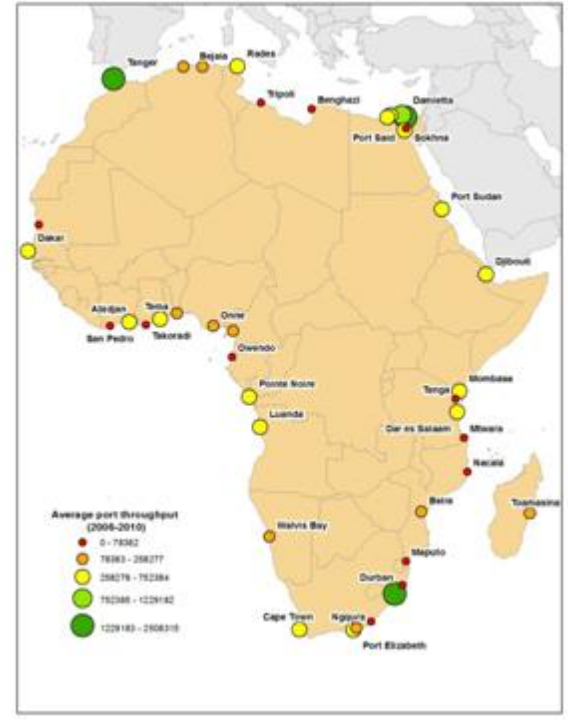
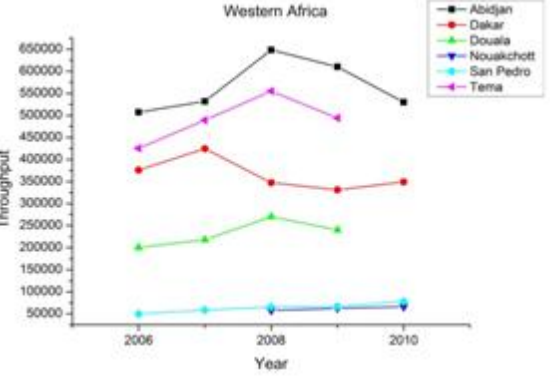
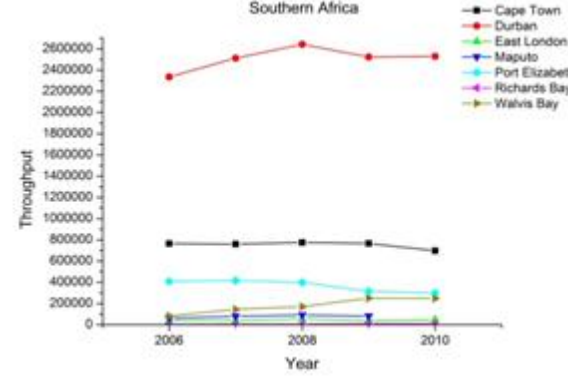
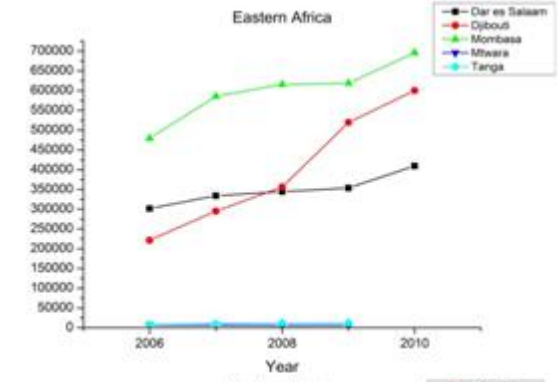
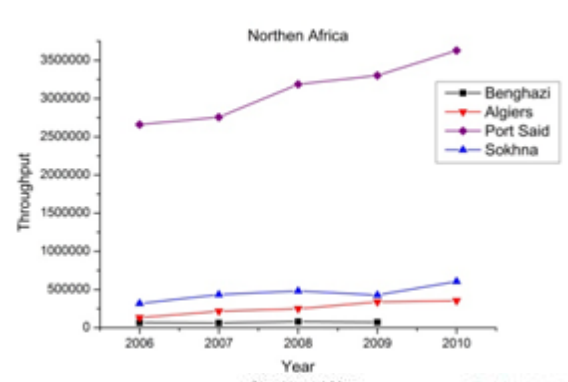
About half of all African ports are fully owned and managed by the public sector.

Some ports have adopted the landlord model (e.g. Nigeria) in which the Port Authority owns the infrastructure while private operators manage facilities.

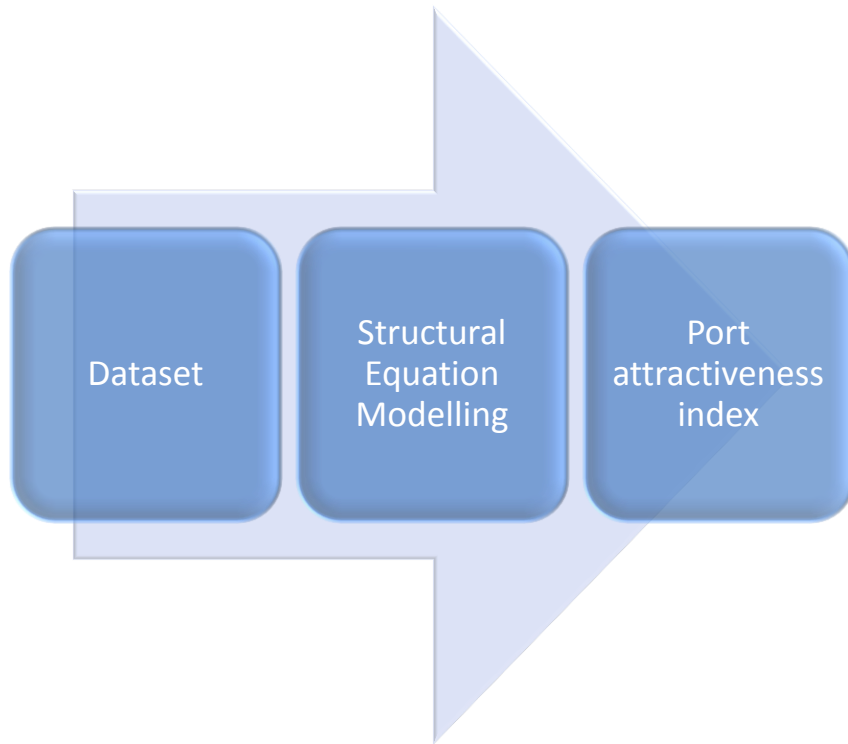
Transport services leading to port with coercive corruption carries almost 70% premium for users.



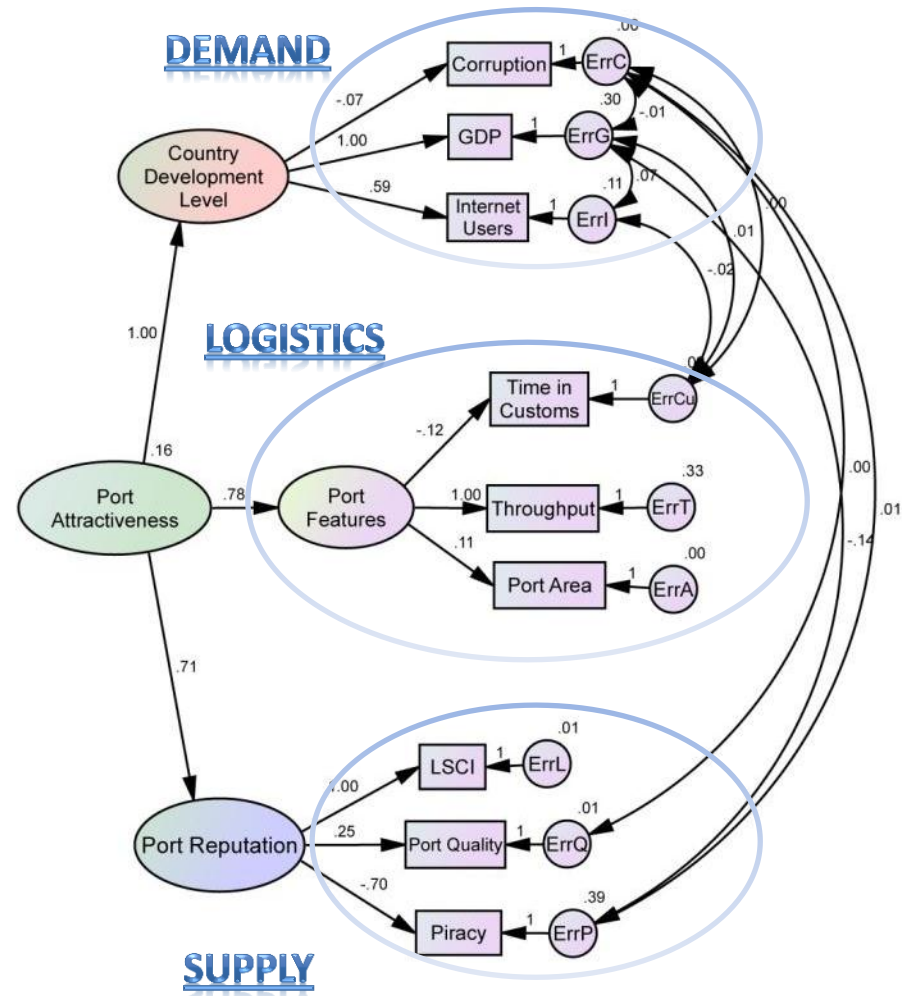
We have collected economic and logistic variables at national and port level for 42 container ports in 23 African countries over the 2006-2010 period. On average, the selected ports handled 455,872 TEUs per year with a standard deviation of 675,649 - indicating a wide range of throughputs in our sample; the maximum value is 3.6 million TEUs for Port Said in 2010; we have recorded the minimum volume of TEU (3,332) in Richard Bay in 2006.



## Methodology



## Model path diagram





# 42 CONTAINER PORTS IN 23 COUNTRIES

## TANGIER-PORT MED



## DURBAN PORT



## MAPUTO PORT



**Diversion Effect**

### TANGIER-PORT MED



Throughput: 1,600,000  
 Area: 1,000,000 m<sup>2</sup>  
 Quays: 4  
 Tot length berths: 581 m  
 Dwell time: 8 days  
 Corruption index: 6.7  
 GDP: 100,354,000 US\$  
 Internet users: 45 %  
 LSCI: 44  
 Port quality index: 4.3  
 Piracy attacks: 0  
 Attractiveness index: 12.1

### DURBAN PORT



Throughput: 2,508,000  
 Area: 1,960,000 m<sup>2</sup>  
 Quays: 9  
 Tot length berths: 2,651 m  
 Dwell time: 4 days  
 Corruption index: 5.2  
 GDP: 293,782,000 US\$  
 Internet users: 9 %  
 LSCI: 29  
 Port quality index: 4.5  
 Piracy attacks: 0  
 Attractiveness index: 13.5

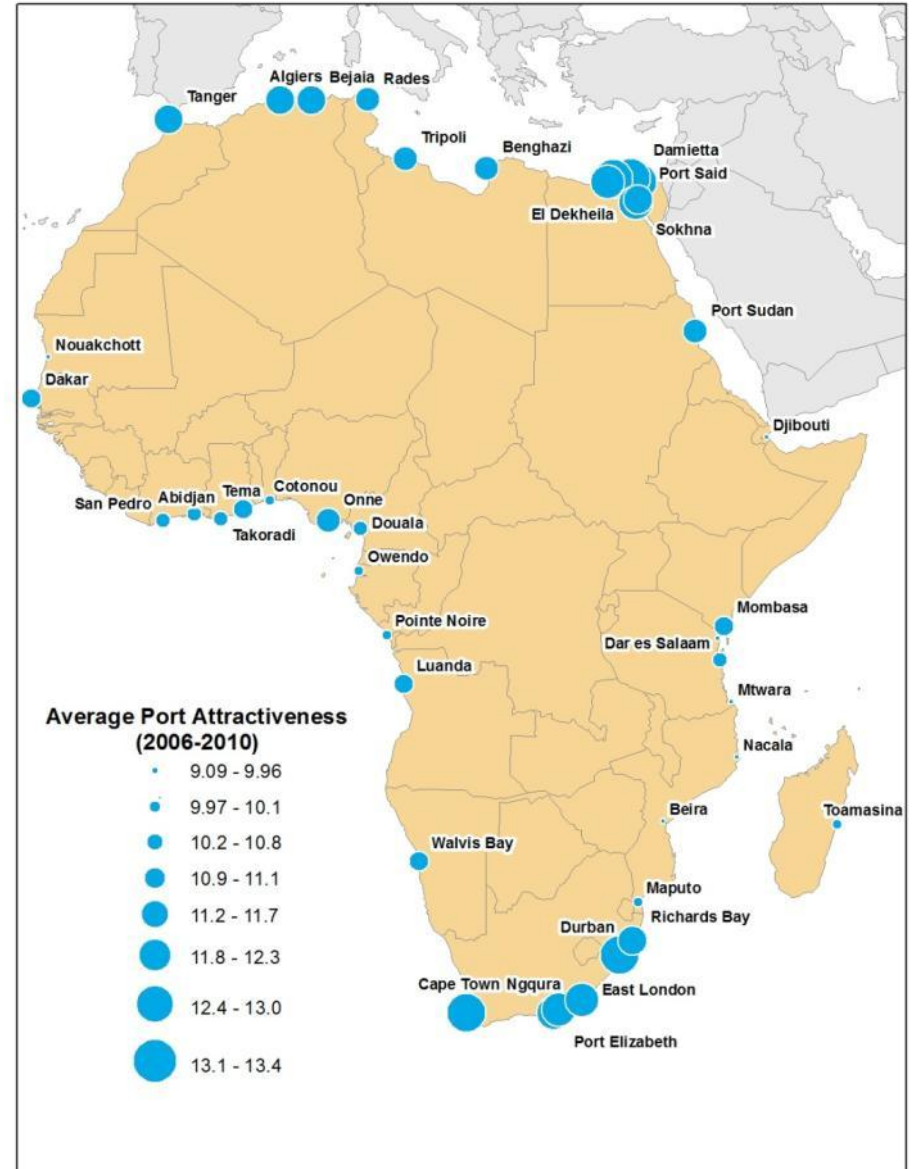
### MAPUTO PORT



Throughput: 79,320  
 Area: 80,000 m<sup>2</sup>  
 Quays: 1  
 Tot length berths: 300 m  
 Dwell time: 22 days  
 Corruption index: 7.3  
 GDP: 8,701,000 US\$  
 Internet users: 1.5 %  
 LSCI: 8  
 Port quality index: 2.9  
 Piracy attacks: 1  
 Attractiveness index: 9.7

## CONCLUSIONS

- ❖ Clear context; that is, what city and what type of port investment is under consideration.
- ❖ The economic relationship between the investment(s) and the market must be understood by all players.
- ❖ Proper understanding of not just capacity but capacity-demand equation is a bottom-line requirement for proper port planning.
- ❖ The private sector is a positive force in driving investment in modern ports and is best placed to obtain maximum efficiency and new opportunities for port systems.



# Thank you



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