Are Port’s Drivers of Sustainable Economic Development? 
Exploring Linkages between Ports, Growth and Employment

Jamie Simpson – Port Strategy Advisor / Economist
TIPS Pretoria 16 02 2015
## Objectives

Can ports drive sustainable growth?

<table>
<thead>
<tr>
<th>Discussion Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Trade enabling / gateways &amp; logistics systems</td>
</tr>
<tr>
<td>• Supporting business growth</td>
</tr>
<tr>
<td>• Supporting employment growth</td>
</tr>
<tr>
<td>• Evolving roles of public and private sector</td>
</tr>
<tr>
<td>• Ports, Cities and Externalities: Good &amp; Bad Neighbours</td>
</tr>
<tr>
<td>• Aligning objectives among multiple stakeholders</td>
</tr>
<tr>
<td>• Institutional partnerships</td>
</tr>
<tr>
<td>• Competing supply / logistics chains</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SA Strategic Hotspots</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gateway/Corridor</strong></td>
</tr>
<tr>
<td>SIPS2</td>
</tr>
<tr>
<td>Operation Phakisa</td>
</tr>
<tr>
<td>Transnet MDS Execution and core business focus – 7 yr/R300Bn/Multi-sector</td>
</tr>
<tr>
<td><strong>Enterprise &amp; Employment</strong></td>
</tr>
<tr>
<td>LED in port cities</td>
</tr>
<tr>
<td>Maritime Industries – O&amp;G, marine engineering – cluster strategies</td>
</tr>
<tr>
<td>Special Export Zone (SEZ) - Saldanha</td>
</tr>
</tbody>
</table>
South Africa – GDP and Trade Growth

South Africa Real GDP Growth

Trading Partners – EXPORTS (by value)

Trading Partners – IMPORTS (by value)

Source: SARS

Source: IMF Economic Outlook, October 2014
South Africa – Container Traffic Growth

Container Throughput at South Africa Ports

<table>
<thead>
<tr>
<th>Year</th>
<th>TEUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>3.73</td>
</tr>
<tr>
<td>2010</td>
<td>3.81</td>
</tr>
<tr>
<td>2011</td>
<td>3.99</td>
</tr>
<tr>
<td>2012</td>
<td>4.42</td>
</tr>
<tr>
<td>2013</td>
<td>4.69</td>
</tr>
</tbody>
</table>

Source: World Bank

TEU-GDP Growth Multiplier

<table>
<thead>
<tr>
<th>Year</th>
<th>Multiplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>0.7</td>
</tr>
<tr>
<td>2011</td>
<td>1.3</td>
</tr>
<tr>
<td>2012</td>
<td>4.4</td>
</tr>
<tr>
<td>2013</td>
<td>3.2</td>
</tr>
</tbody>
</table>
SA: Container Market

- Richards Bay: 1%, 24k TEUs
- Durban: 58%, 2.66 Mn TEUs
- East London: 15%, 0.71 Mn TEUs
- Port Elizabeth: 6%, 0.26 Mn TEUs
- Saldanha: <1%, 92 TEUs
- Cape Town: 19%, 0.9 Mn TEUs

Source: Transnet
• Fairly Balanced Container Trade at all ports with an overall Import:Export ratio of 50:50
• Empties accounted for around 29% of the total South Africa throughput in 2014
### Strategic Context

#### South Africa Growth Strategy: SIPS2 / MDS and LED

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Role of Ports</th>
<th>Instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>National Development</strong></td>
<td>• Gateway functions</td>
<td>• Long term strategy / policy frameworks - national leadership</td>
</tr>
<tr>
<td></td>
<td>• Trade enabling – export/imports</td>
<td>• Benefits spatially distributed nationally ... <em>thus</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Multi-tiered investment arrangements</td>
</tr>
<tr>
<td><strong>Regional Development</strong></td>
<td>• Gateways</td>
<td>• Long term strategy / policy frameworks - Provincial leadership</td>
</tr>
<tr>
<td></td>
<td>• Facilitate connectivity to balance spatial structure of the economy</td>
<td>• Multi-tiered investment arrangements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ports – Special Economic Zones</td>
</tr>
<tr>
<td><strong>City – Region Development</strong></td>
<td>• Local development asset</td>
<td>• Long term Planning – Local leadership</td>
</tr>
<tr>
<td></td>
<td>• Catalyst of port cluster</td>
<td>• Port – City land use planning</td>
</tr>
<tr>
<td></td>
<td>• Catalyse formation of other export oriented clusters</td>
<td>• Connecting infrastructure – road/rail</td>
</tr>
<tr>
<td></td>
<td>• Employment</td>
<td>• Support port cluster growth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ports – EPZ / SPEZs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Offset negative externalities</td>
</tr>
<tr>
<td><strong>Transport efficiency</strong></td>
<td>• Efficient provider of transport services</td>
<td>• Port reform</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Incentives &amp; risk allocation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Competition and concessions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Master Plan</td>
</tr>
</tbody>
</table>
Ports: Enablers *Plus* Cluster Catalyst

**Mission Critical Enabler**
- Facilitate trade through cargo handling services
- Efficient & Reliable
- Contribute to logistics / supply chain competitiveness & resilience
- High degree of control by the port

**Catalyst**
- Value added port clusters
- Necessary to facilitate waterfront dependent activities – e.g. marine engineering
- Generate employment in the cluster and other industries – backward and forward linkages
- Centres of R&D and innovation in the maritime sector
- Benefits driven by actors outside the port collaborating with the port
Trade Enabler: Port Capacity & Efficiency

National growth strategies focusing on trade have required significant expansion of port facilities & step changes in efficiency: the primary function of ports is to enable trade

The mission critical role for ports is to provide efficient, reliable, safe and sustainable cargo handling services: supply meets demand, cost of cargo handling is minimised

Policy Response: Port reform centred primarily on landlord port models, competitive concessions and private sector participation (terminal investment / operations)

Competition vs Regulation: General policy direction is to facilitate competition between and within ports – light touch and often no regulation of tariffs

<table>
<thead>
<tr>
<th>Objective</th>
<th>KPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berth window reliability</td>
<td>No ship queuing, predictable schedule of arrivals and departures</td>
</tr>
<tr>
<td>Efficiency</td>
<td>Crane moves / hour (25+), crane moves / ship hour at berth, vessel turnaround time</td>
</tr>
<tr>
<td>Dwell times</td>
<td>4-5 days</td>
</tr>
<tr>
<td>Sustainability</td>
<td>Air quality / emissions, GHG,</td>
</tr>
<tr>
<td>Connectivity</td>
<td>Total through cost, reliability, modal competition</td>
</tr>
</tbody>
</table>
Future Port Development Factors:
The Port Viewpoint

- **Market**
  - determine the market drivers and scale

- **Competition**
  - geographic coverage, services, threat of entry

- **Infrastructure**
  - requirements of the future, inland connectivity / no / partial control key competitive / operational requirement

- **Customers**
  - what do the lines need? what do beneficial cargo owners need?

- **Efficiency**
  - cost drivers, operational efficiency

Key Factors that Will Influence Port Development

<table>
<thead>
<tr>
<th>Method</th>
<th>Cost (in $K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rail</td>
<td>+70</td>
</tr>
<tr>
<td>Port &amp; Harbour</td>
<td>+30</td>
</tr>
<tr>
<td>Ocean</td>
<td>+190</td>
</tr>
<tr>
<td>Total</td>
<td>+200</td>
</tr>
</tbody>
</table>

Comparison of costs via different routes:

- via LA: $1,000
- via NY: $1,500
- via HR: $2,000
- via C: $2,500
- via S: $3,000

Legend:
- Rail
- Port & Harbour
- Ocean
Logistic Chain Players – Port Choice Drivers

- Cargo Owner /Shipper
- Freight Forwarder /3PL
- Shipping Line /Carrier
- PA/Terminal Operator

Customer

Total Through-Cost & Efficiency & Reliability
## Catalyst: Gateway Functions

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Responses</th>
</tr>
</thead>
</table>
| Trade facilitation: stimulate business & employment growth | Investment in fixed and mobile assets to improve the flow of physical goods – capacity and efficiency enhancements  
- Canada – Asia Pacific Gateway, Continental Gateway, Atlantic Gateway  
- US – Heartland Corridor (double stack trains from Norfolk, VA to Ohio  
- LALB - Alameda Corridor - facilitate cargo evacuation- LA/LB to inland terminals  
Regional growth | Recognise geographic market segmentation and need for multiple gateways / corridors to improve access to services, stimulate competition and redundancy  
Service multiple cargo markets / leverage large fixed asset investments  
Risk sharing | Create public – private partnerships to improve planning and co-ordination  
Cost sharing among beneficiaries  
Sustainability | Modal shift targets – invest in supporting facilities (road to rail / water)  
Internalise externalities and allocate to port – UK Felixstowe £100mn of investment to increase capacity of inland transport to offset increase traffic paid by private port operator as part of planning permission to expand terminal

### Contributions to Asia-Pacific Gateway Projects Since 2005 (C$bn)

- Provincial Gov't: $13.7
- Federal Gov't: $5.4
- Local Gov't: $1.6
- Private Sector: $1.0
Catalysts: Employment & Value Added

- Evidence Supports the Positive Role of Ports & Economic Growth (OECD)
  - Value added
    - Economic activity throughput the port cluster
    - 1 mt of throughput = US$100 in value added
    - Sites of cluster formation in other industries – e.g. chemicals (Antwerp) energy (Houston)
  - Employment
    - Direct port related jobs relatively small
    - Indirect employment far exceeds direct
    - Significant linkages and multipliers
    - 1 mn mt of throughput = 800 jobs including direct, indirect & induced effects
  - Value – added & Employment benefits depends on port type and commercial policy
    - Bulks less than container
    - Transhipment low value / less labour
    - Port asset leveraging

Value Added and Port Volume

Employment and Port Volume
## Ports and the City

<table>
<thead>
<tr>
<th>Policy Objectives</th>
<th>Policy &amp; Planning Responses</th>
</tr>
</thead>
</table>
| Growth & employment       | - Ports are major consumers of urban land – ensure supply of appropriate land use designations – In / Outside Port Gates  
  • Quayside cargo handling (bulk, containers, general and special cargo)  
  • Cargo storage (empty containers)  
  • Truck and chassis areas  
  • Road connections to inland cargo markets  
  • Repair  
  • Intermodal facilities  
  • For some ports, on-port land constraints couple with capacity limits means some activities are also carried out off-port in back-up areas – e.g. Hong Kong |
| Economic Diversification  | - Ports tend to have unique access to serviced waterfront access as a result of state policy decisions - Facilitate access of waterfront dependent industries to port land and port services on favourable terms / negotiate agreements  
  • Collaborate with Port Authority / Terminal Operators  
  • Energy sector (e.g. offshore wind, O&G servicing) |
| Sustainability            | - Contribute to the overall ecological health of the region by reducing impacts from port activity: sustain and enhancing ecosystems.  
  • Reduce air emissions, including greenhouse gas intensity, and promote energy conservation in port operations and developments.  
  • Improve land and water quality within the port |
Evolving Roles of Public Policy

<table>
<thead>
<tr>
<th>Public</th>
<th>Port / Terminal Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy and Planning</strong></td>
<td>Strategic Framework – Clear goals Policy and Regulation Plan for growth: land &amp; infrastructure Manage externalities / nuisance Resilience (climate change / risk)</td>
</tr>
<tr>
<td><strong>Expansion</strong></td>
<td>Planning permission and conditionality Co-ordinate connecting infrastructure &amp; utilities</td>
</tr>
<tr>
<td><strong>Investment</strong></td>
<td>General / basic infrastructure Linking infrastructure</td>
</tr>
<tr>
<td><strong>Economic Development</strong></td>
<td>Promote growth and employment Provide enabling environment Business support Human capital development – work with business on skill requirements and training needs</td>
</tr>
</tbody>
</table>
Are Port’s Drivers of Sustainable Economic Development?

- **A Qualified Yes**

- Sustainable Economic Development Requires Multi-stakeholder Partnerships
- Port assets and operations contribute to business competitiveness through efficient transport services in the first instance
- Direct employment in ports is small relative to indirect / induced employment
- Port assets and services are a vital input to linked industries and should be partners in servicing these industries growth (especially where these are waterfront dependent for operations and port have control of waterfronts)

Thank You