

ROAD AND RAIL TRANSPORT CHALLENGES TO THE TOTAL FEED TO FOOD SUPPLY CHAIN

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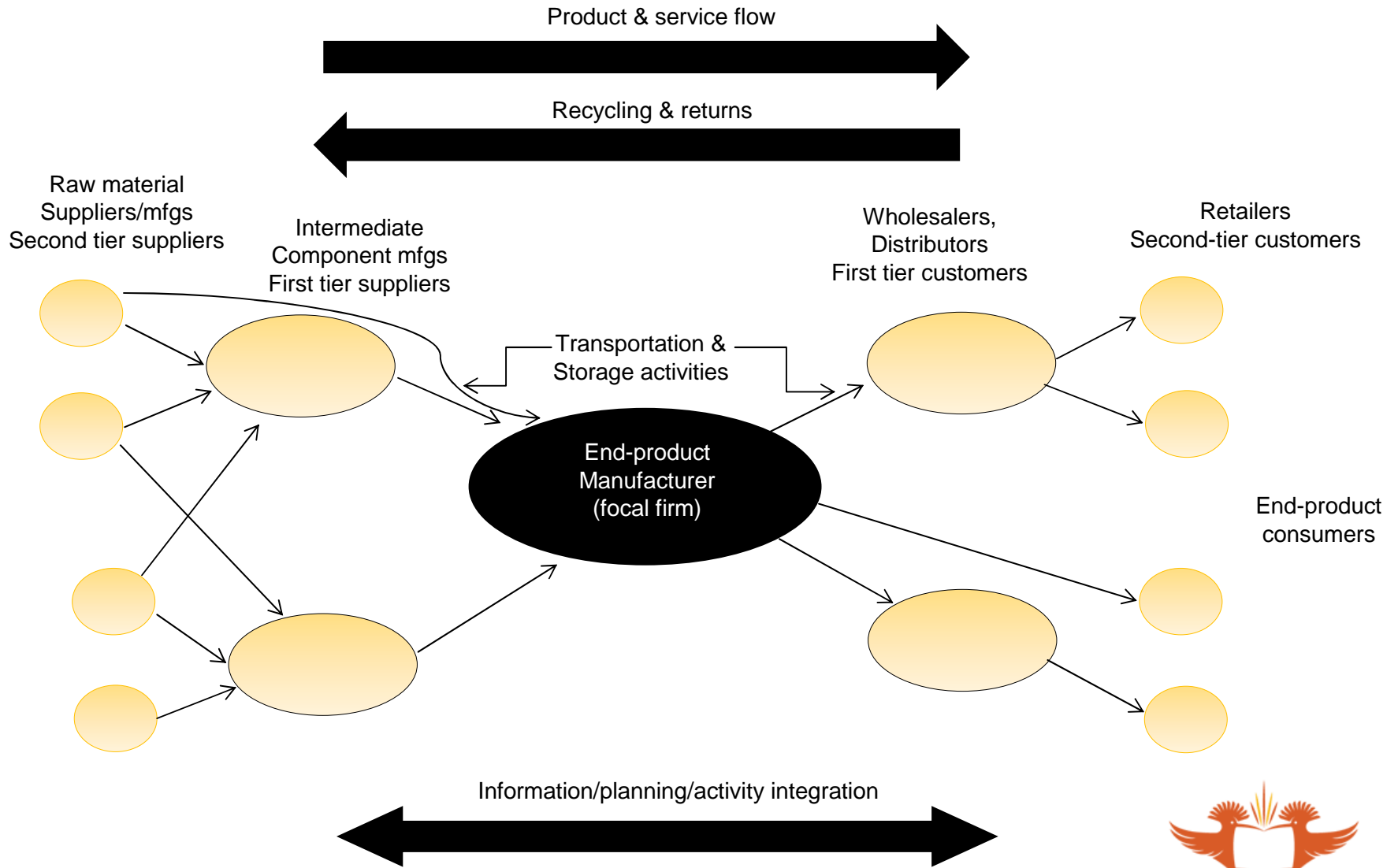
SUPPLY CHAIN:

Is the movement of materials as they flow from their source to the end customer. Supply Chain includes purchasing, manufacturing, warehousing, transportation, customer service, demand planning, supply planning and supply chain management. It is made up of the people, activities, information and resources involved in moving a product from its supplier to customer.

Source: Pienaar & Vogt: Business Logistics Management



A GENERIC SUPPLY CHAIN



Source: Wisner, Leong, Tan: Principles of Supply Chain Management



UNIQUE FEATURES OF FEED TO FOOD SUPPLY CHAINS

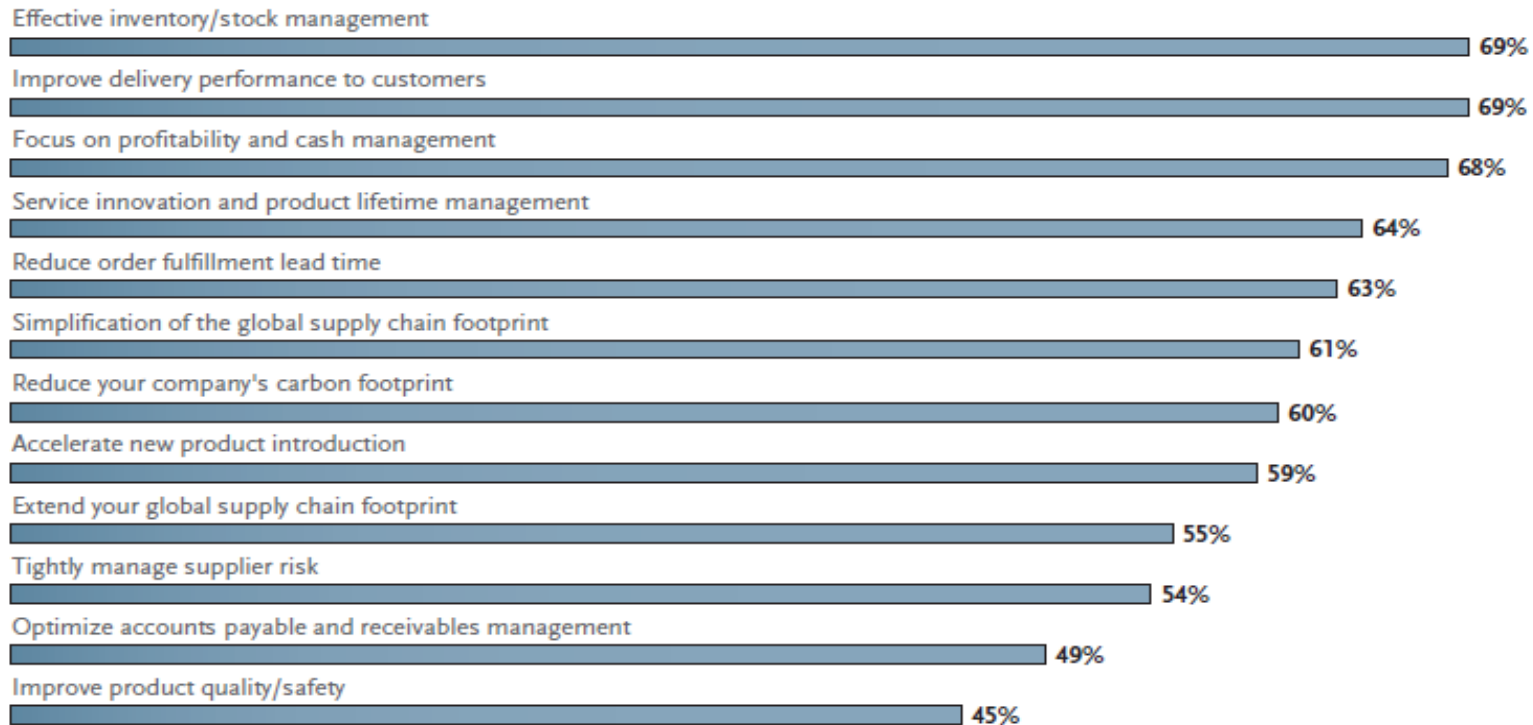
- Animal feed is of strategic importance to other sectors
- Risks are high
- Length and complexity of supply chains
- Fragmentation of farms and transformation industries
- Contamination
- Traceability
- Competition



SO, WHAT DRIVES (INTERNATIONAL) SUPPLY CHAIN MANAGEMENT STRATEGIES IN BUSINESS?

Top Supply Chain Risk Management Strategies

Percentage of participants that plan to pay significant attention to the following risk mitigation strategies by 2012 (multiple answers possible)



AN ANNUAL SURVEY by PRTM MANAGEMENT CONSULTANTS

2010–2012 Global Supply Chain Trends

Are Our Supply Chains Able to Support the Recovery?
Lessons Learned from the Global Recession.



INTERNATIONAL SUPPLY CHAIN TRENDS: COO AGENDAS

The Global Leader COO Agenda 2010–2012



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INTERNATIONAL SUPPLY CHAIN TRENDS: CHALLENGES TO LOGISTICS SERVICE PROVIDERS

Top Eight Challenges to Logistic Service Providers *(multiple answers possible)*



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2010–2012

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TYPICAL TRANSPORT CHALLENGES IN SUPPLY CHAINS

- Modal choice
- High road costs
- Corridor development
- Quality of infrastructure
- Intermodal facilities
- Skills
- Labour issues
- Customs and border procedures
- Regulation
- Track and trace
- Timeliness
- Environmental

INTERNATIONAL COMPARISON

- ❑ Higher logistics performance is strongly associated with **trade expansion, export diversification, ability to attract foreign direct investments and economic growth**
- ❑ However the performance is strongly associated with **country specific factors** such as trade procedures , **transport** and telecommunications **infrastructure** and the domestic market for support services
- ❑ Logistics performance depends on the **reliability and predictability of the supply chain**

Factors impacting logistics performance are:

- **Infrastructure** – information technology and physical infrastructure (e.g. ports and roads).
- **Efficient border management** and the coordination of agencies involved in border clearance
- **Transport regulation**
- **Skills etc.**



INTERNATIONAL COMPARISON

- ❑ Six areas of comparison for the 2010 World Bank Logistics Performance Index (LPI)
 - Efficiency of the customs clearance process
 - Quality of trade and transport-related infrastructure
 - Ease of arranging competitively priced shipments
 - Competence and quality of logistics services
 - Ability to track and trace consignments
 - Frequency with which shipments reach the consignee with the scheduled or expected time



INTERNATIONAL COMPARISON

Table 1.3

Top 10 logistics performers 2010, upper middle-income countries

Economy	2010 LPI			2007 LPI		
	LPI rank	LPI score	% of highest performer	LPI rank	LPI score	% of highest performer
South Africa	28	3.46	78.9	24	3.53	79.4
Malaysia	29	3.44	78.4	27	3.48	77.7
Poland	30	3.44	78.2	40	3.04	63.9
Lebanon	33	3.34	75.1	98	2.37	42.9
Latvia	37	3.25	72.2	42	3.02	63.2
Turkey	39	3.22	71.4	34	3.15	67.5
Brazil	41	3.20	70.6	61	2.75	54.9
Lithuania	45	3.13	68.5	58	2.78	55.7
Argentina	48	3.10	67.4	45	2.98	62.1
Chile	49	3.09	67.3	32	3.25	70.5

Source: Logistics Performance Index, 2007 and 2010.



Source: Connecting to compete. Trade Logistics in the Global economy 2010

INTERNATIONAL COMPARISON

Figure 1.5 LPI overperformers and underperformers in 2010, relative to income per capita



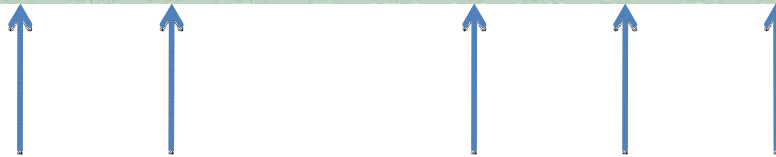
Note: Fitted values are based on an ordinary least squares regression using data for all countries. Underperformers (black diamonds) are defined as the non-high income countries with the 10 smallest residuals. Overperformers (black circles) are defined as the non-high income countries with the 10 largest residuals. Other oil-producing countries are represented by triangles.
Source: Logistics Performance Index, 2010, and World Bank 2008b.

Source: Connecting to compete. Trade Logistics in the Global economy 2010



INTERNATIONAL COMPARISON ON A RANGE OF LOGISTICS ACTIVITIES

	LPI rank			LPI score			% of highest performer	Customs		Infrastructure		International shipments		Logistics quality and competence		Tracking and tracing		Timeliness	
	Rank	Lower bound	Upper bound	Score	Lower bound	Upper bound		Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Germany	1	4	1	4.11	4.07	4.16	100.0	3	4.00	1	4.34	9	3.66	4	4.14	4	4.18	3	4.48
Japan	7	10	5	3.97	3.91	4.03	95.2	10	3.79	5	4.19	12	3.55	7	4.00	8	4.13	13	4.26
United Kingdom	8	11	5	3.95	3.89	4.02	94.9	11	3.74	16	3.95	8	3.66	9	3.92	7	4.13	8	4.37
Hong Kong SAR, China	13	18	6	3.88	3.78	3.98	92.4	8	3.83	13	4.00	6	3.67	14	3.83	17	3.94	26	4.04
United States	15	18	11	3.86	3.82	3.89	91.7	15	3.68	7	4.15	36	3.21	11	3.92	5	4.17	16	4.19
France	17	18	11	3.84	3.78	3.91	91.3	17	3.63	14	4.00	28	3.30	12	3.87	14	4.01	9	4.37
China	27	28	26	3.49	3.45	3.53	79.9	32	3.16	27	3.54	27	3.31	29	3.49	30	3.55	36	3.91
South Africa	28	36	24	3.46	3.28	3.63	78.9	31	3.22	29	3.42	31	3.26	25	3.59	24	3.73	57	3.57



Source: Connecting to compete. Trade Logistics in the Global economy 2010

INTERNATIONAL COMPARISON BY REGION

Question	Response categories	Region					
		East Asia and Pacific	Europe and Central Asia	Latin America and Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa
Question 16: Level of fees and charges							
Port charges	Very high or high	61	40	49	33	40	53
	Low or very low	8	16	7	20	2	16
Airport charges	Very high or high	55	54	42	39	39	43
	Low or very low	6	14	7	12	20	16
Road transport rates	Very high or high	42	34	52	31	35	45
	Low or very low	12	23	6	27	28	22
Rail transport rates	Very high or high	52	24	35	10	29	25
	Low or very low	17	25	22	53	9	34
Warehousing/transloading charges	Very high or high	49	27	39	20	14	40
	Low or very low	17	27	9	26	15	17
Agent fees	Very high or high	48	33	16	17	17	21
	Low or very low	16	34	11	18	15	26



Source: Connecting to compete. Trade Logistics in the Global economy 2010

INTERNATIONAL COMPARISON

Question	Response categories	Region					
		East Asia and Pacific	Europe and Central Asia	Latin America and Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa
Question 17: Quality of infrastructure							
Ports	Low or very low	37	57	34	47	36	42
	High or very high	13	16	19	9	9	23
Airports	Low or very low	42	41	25	48	47	41
	High or very high	19	18	27	6	11	21
Roads	Low or very low	51	57	50	45	64	50
	High or very high	11	19	19	8	6	20
Rail	Low or very low	69	49	86	61	65	81
	High or very high	2	17	3	0	11	3
Warehousing/transloading facilities	Low or very low	49	33	20	48	37	28
	High or very high	12	18	32	5	12	21
Telecommunications and IT	Low or very low	41	32	15	27	12	30
	High or very high	15	28	46	23	62	38



Source: Connecting to compete. Trade Logistics in the Global economy 2010

INTERNATIONAL COMPARISON

Question	Response categories	Region					
		East Asia and Pacific	Europe and Central Asia	Latin America and Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa
Question 18: Competence and quality of service							
Road	Low or very low	32	23	32	21	29	30
	High or very high	11	31	10	27	18	25
Rail	Low or very low	70	51	86	71	60	70
	High or very high	2	12	3	0	9	6
Air transport	Low or very low	10	24	9	11	6	21
	High or very high	33	29	46	41	54	38
Maritime transport	Low or very low	27	22	4	11	14	18
	High or very high	15	38	35	30	30	47
Warehousing/transloading and distribution	Low or very low	26	18	21	33	20	20
	High or very high	17	30	41	9	15	22
Freight forwarders	Low or very low	12	12	1	11	1	9
	High or very high	38	39	55	29	41	50
Customs agencies	Low or very low	63	34	29	30	44	34
	High or very high	5	23	27	22	16	37
Quality/standards inspection agencies	Low or very low	46	47	32	24	31	26
	High or very high	17	13	18	22	30	20

Source: Connecting to compete. Trade Logistics in the Global economy 2010



INTERNATIONAL COMPARISON

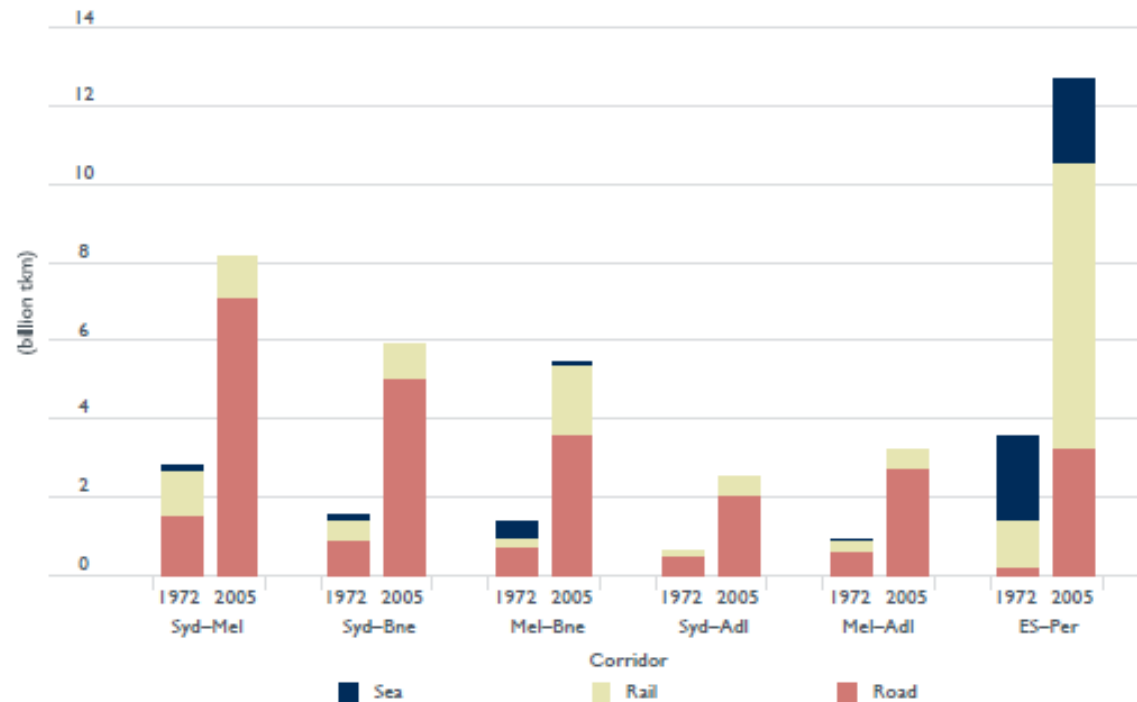
Question	Response categories	Region					
		East Asia and Pacific	Europe and Central Asia	Latin America and Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa
Question 19: Efficiency of processes							
Clearance and delivery of imports	Hardly ever or rarely	12	15	9	19	11	17
	Often or nearly always	48	64	46	50	49	52
Clearance and delivery of exports	Hardly ever or rarely	0	6	9	23	9	8
	Often or nearly always	82	71	70	69	70	60
Transparency of customs clearance	Hardly ever or rarely	33	38	11	38	30	27
	Often or nearly always	24	33	54	36	30	52
Provision of adequate and timely information on regulatory changes	Hardly ever or rarely	35	39	15	33	44	31
	Often or nearly always	25	36	53	47	15	40
Expedited customs clearance for traders with high compliance levels	Hardly ever or rarely	20	28	19	27	33	29
	Often or nearly always	38	38	57	37	26	37

Source: Connecting to compete. Trade Logistics in the Global economy 2010



ROAD TRANSPORT TRENDS: AUSTRALIA

Figure 3 Intercapital non-bulk freight task and mode shares, 1972 and 2005



Source: BTRE (2006).

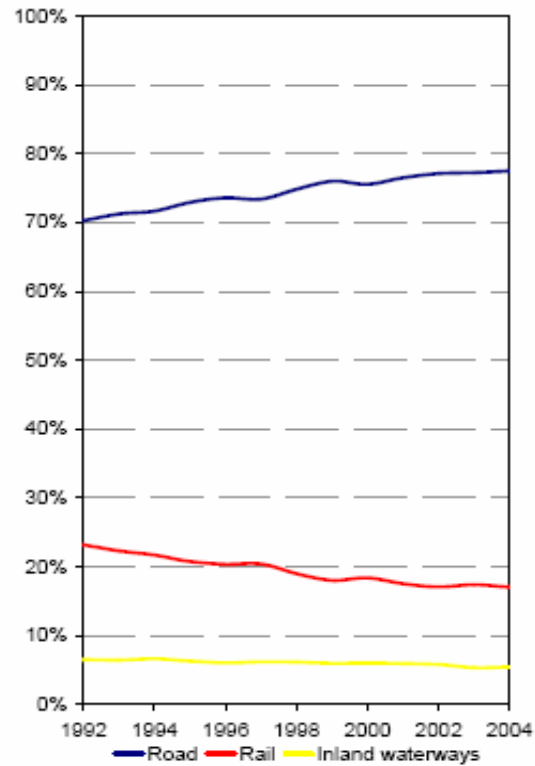
Source: Australian Government: Bureau of Infrastructure, Transport and Regional Economies



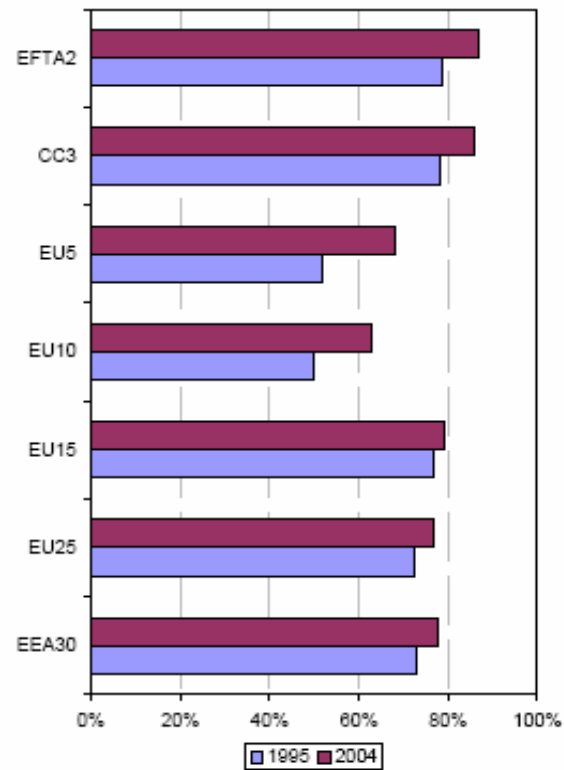
ROAD TRANSPORT TRENDS: ENLARGED EU (2004)

Figure 1: a) Modal shares in freight transport demand in EEA-30 and b) Share of road freight transport in 1995 and 2004 in different regions

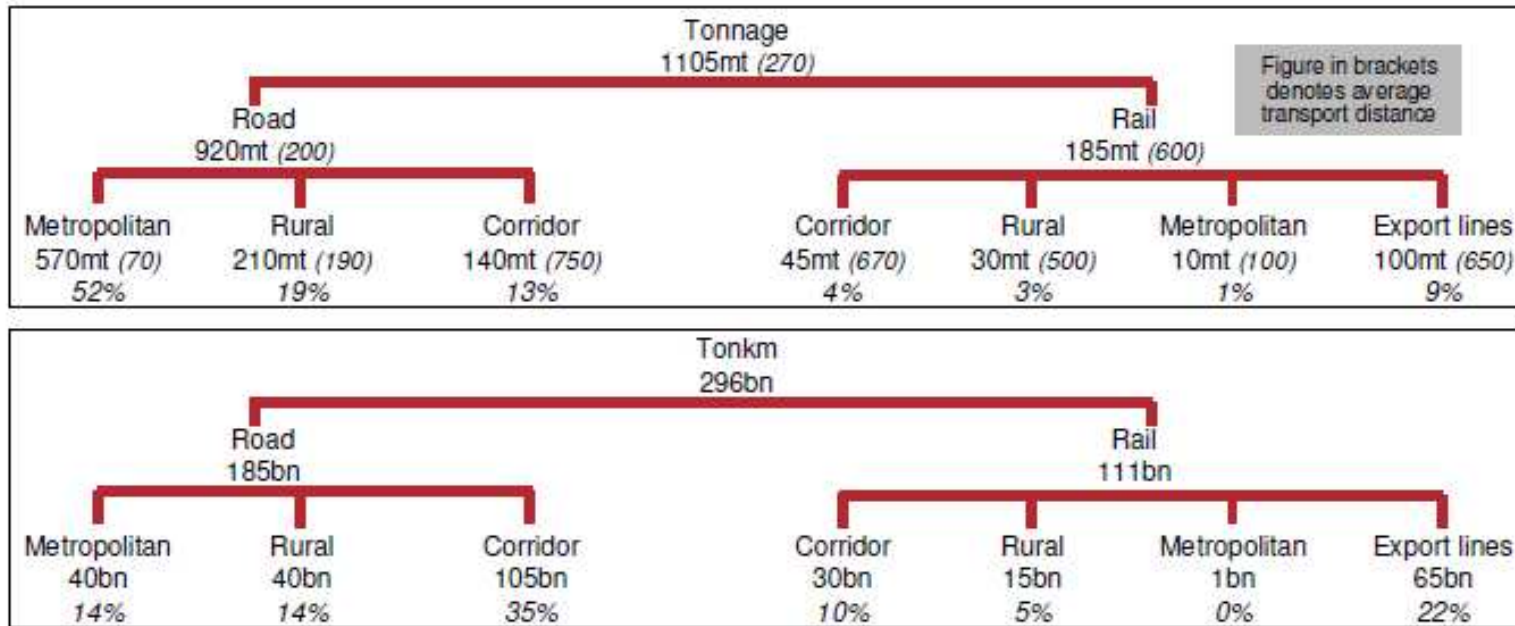
(a)



(b)



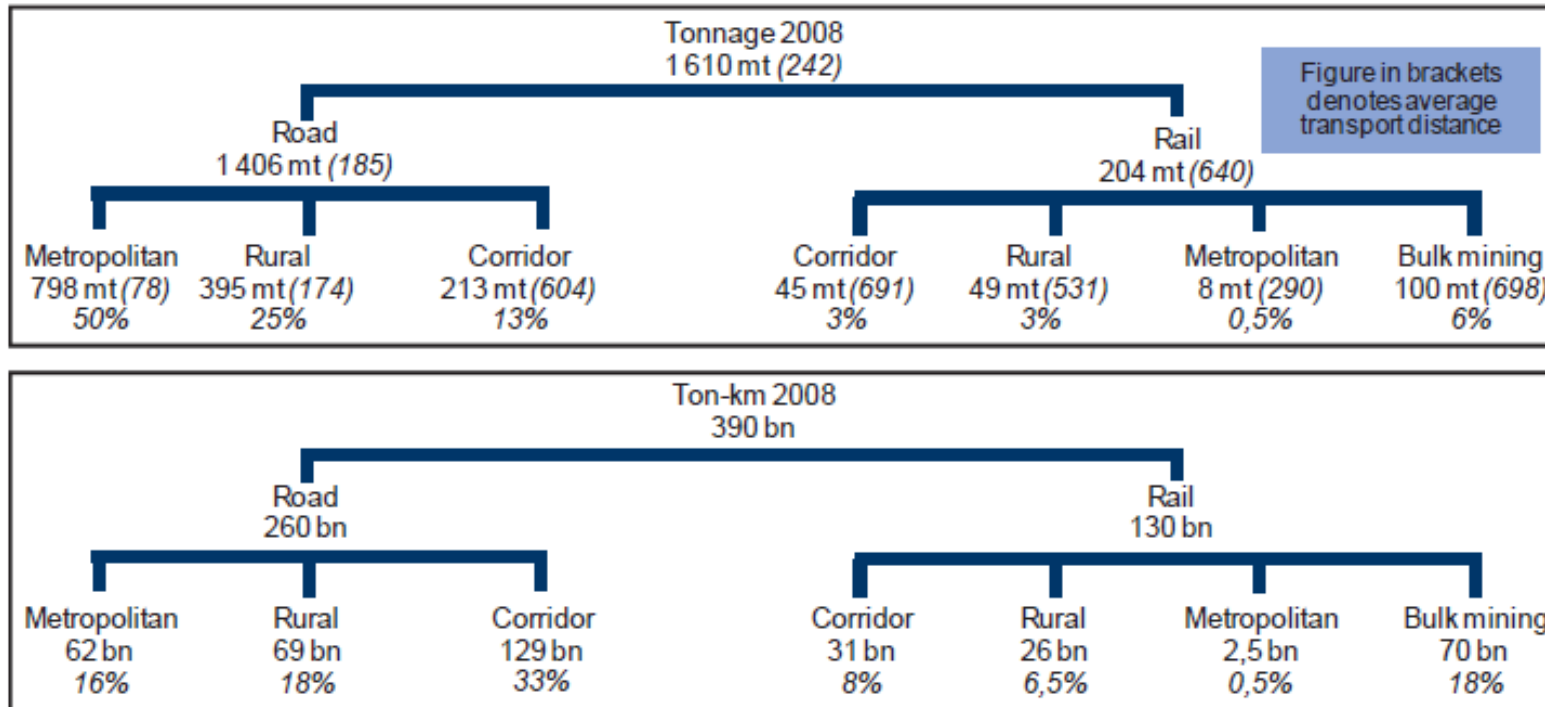
ROAD/RAIL TRANSPORT TRENDS: SOUTH AFRICA (2003)



Source: 1st State of Logistics Survey (2004)



ROAD/RAIL TRANSPORT TRENDS: SOUTH AFRICA (2008)



Source: 6th State of Logistics Survey (2010)



ROAD TRANSPORT TRENDS: SOUTH AFRICA

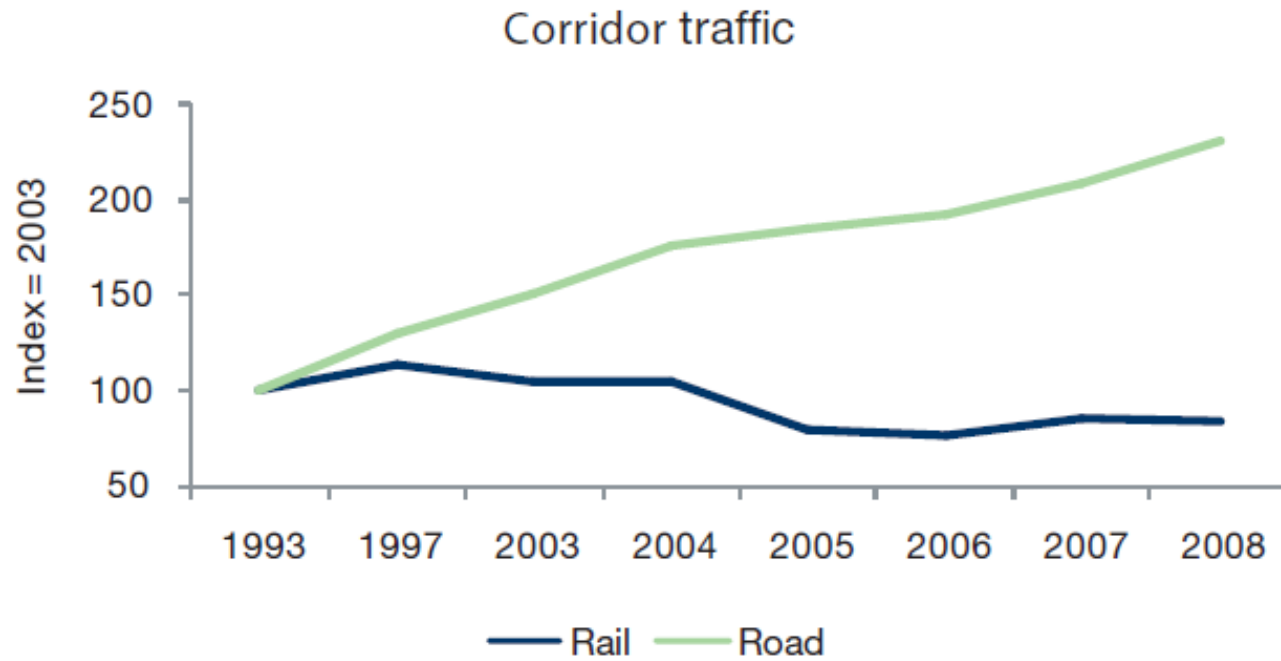


Figure 6: Bulk mining and corridor transport in South Africa since 1993¹¹

11 Note the irregular time period prior to 2003 due to unavailability of data.

ROAD/RAIL CORRIDOR (“CONTESTABLE FREIGHT”) TRENDS: SOUTH AFRICA

Year	Characteristic	Road	Rail	Market growth compared to 2003
2003	Tonnage	140mt (75,7%)	45mt (24,3%)	185mt
	Ton/km	105bn	30bn	135bn
2008	Tonnage	213mt (82,6%)	45mt (17,4%)	258mt (39,5%)
	Ton/km	129bn	31bn	160bn (18,5%)

Source: 1st and 6th State of Logistics Surveys 2010



ROAD/RAIL RURAL TRENDS: SOUTH AFRICA

Year	Characteristic	Road	Rail	Market growth compared to 2003
2003	Tonnage	210mt (87,5%)	30mt (12,5%)	240mt
	Ton/km	40bn	15bn	55bn
2008	Tonnage	395mt (89%)	49mt (11%)	444mt (85%)
	Ton/km	69bn	26bn	95bn (72,7%)

Source: 1st and 6th State of Logistics Surveys 2010



WHAT CAN BE CONCLUDED ABOUT THESE TWO TABLES?

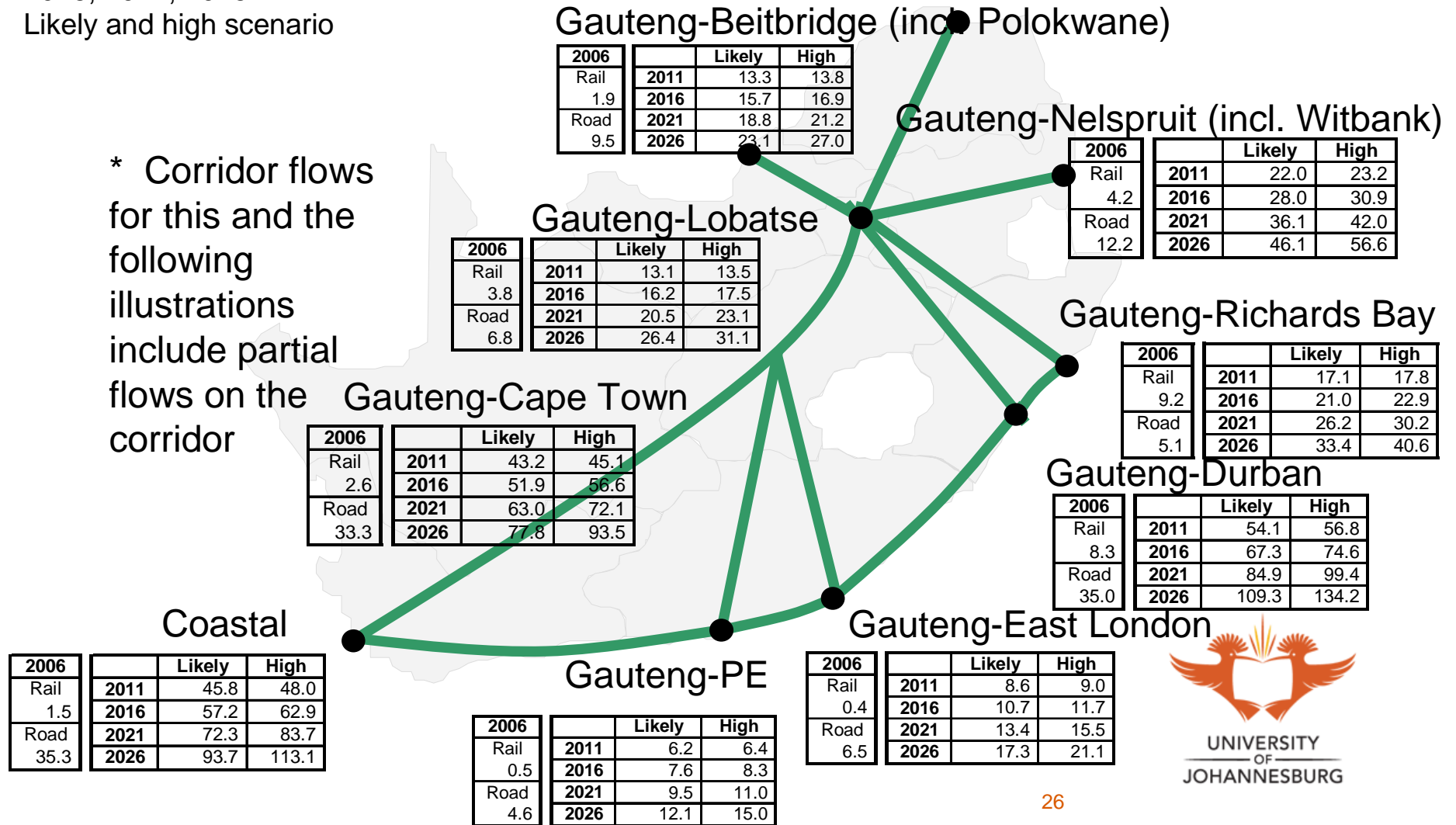
- ❑ Although most of the government focus is on the corridors to “re-balance” the road/rail modal shares we are losing the plot on the rural services
 - From 185mt to 258 mt on the corridors (39.5%) increase in tonnage over five years
 - From 240mt to 444mt on the rural services (85%) increase in tonnage over five years
- ❑ The corridor infrastructure is more likely to cope with the additional tonnages but can we say the same about the rural infrastructure?
- ❑ What is driving this tremendous growth in rural tonnages?
 - It is suspected that rail is no longer the preferred provider for many cargo owners

FREIGHT WILL CONTINUE TO CONSOLIDATE AROUND THE MAIN TRANSPORT CORRIDORS

(Source: Overview of Transnet 3 April 2008. Presentation to TransportSIG by Mr I Naidoo)

Million tons 2006, 2011,
2016, 2021, 2026
Likely and high scenario

* Corridor flows for this and the following illustrations include partial flows on the corridor



CORRIDOR TRAFFIC TRENDS

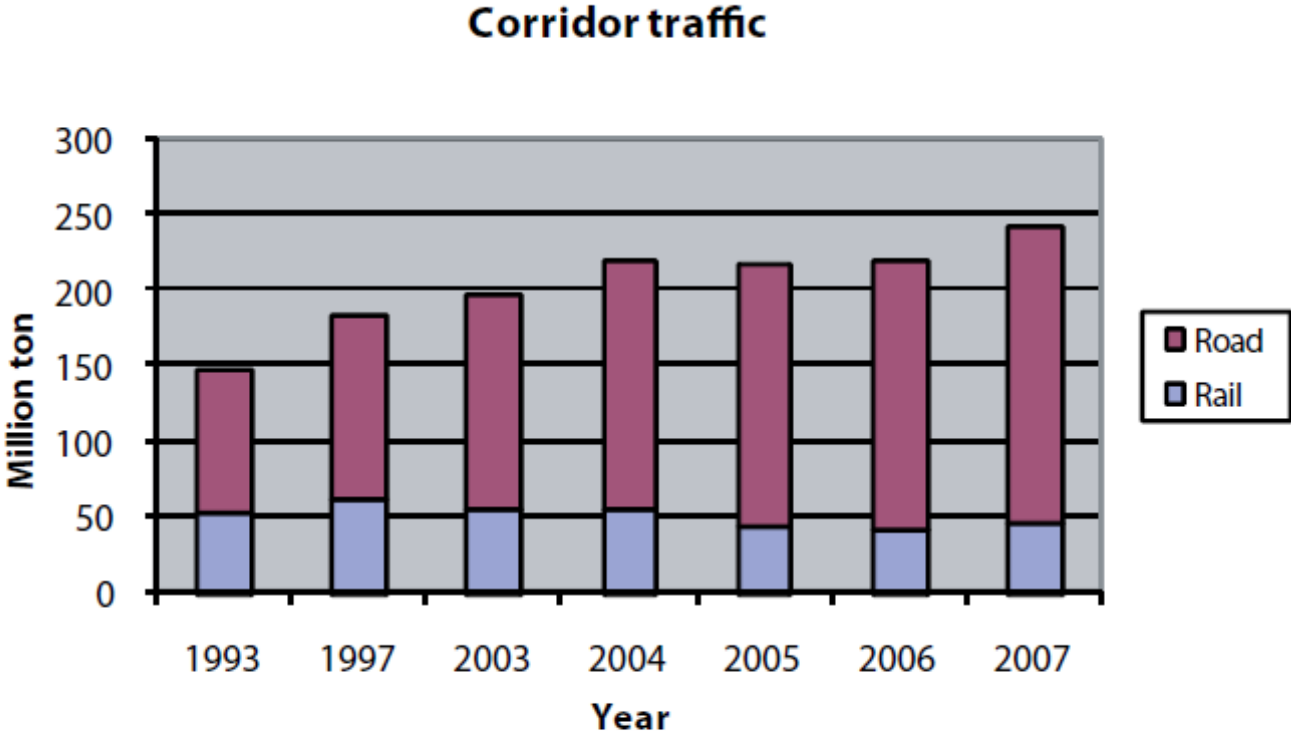


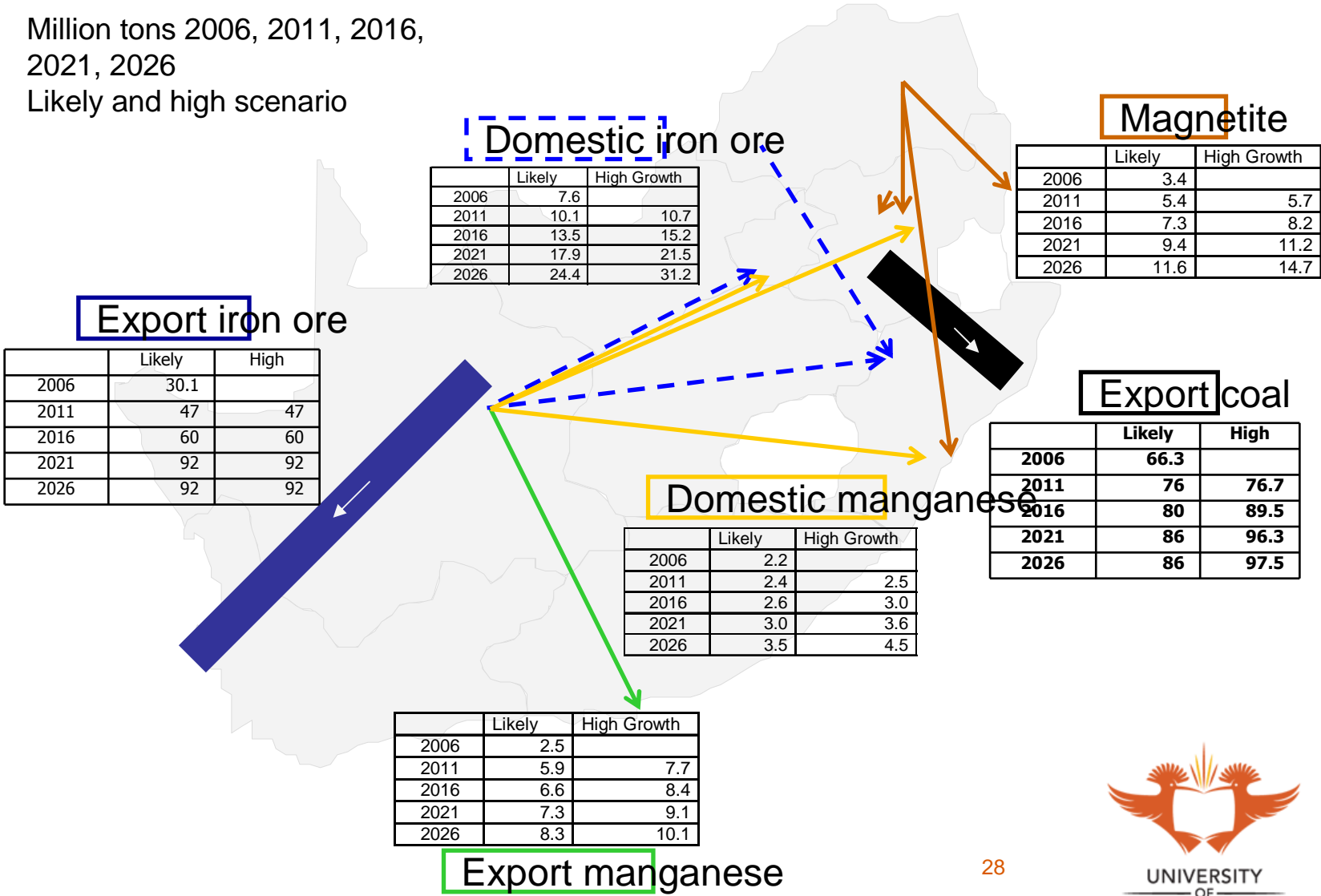
Figure 8: Corridor transport in South Africa since 1993

Source: 5th State of Logistics Survey



THE NEED FOR ADDITIONAL CAPACITY FOR PRIMARY TRAFFIC WILL GROW (SOURCE: OVERVIEW OF TRANSNET 3 APRIL 2008. Presentation to TransportSIG by Mr I Naidoo)

Million tons 2006, 2011, 2016, 2021, 2026
Likely and high scenario

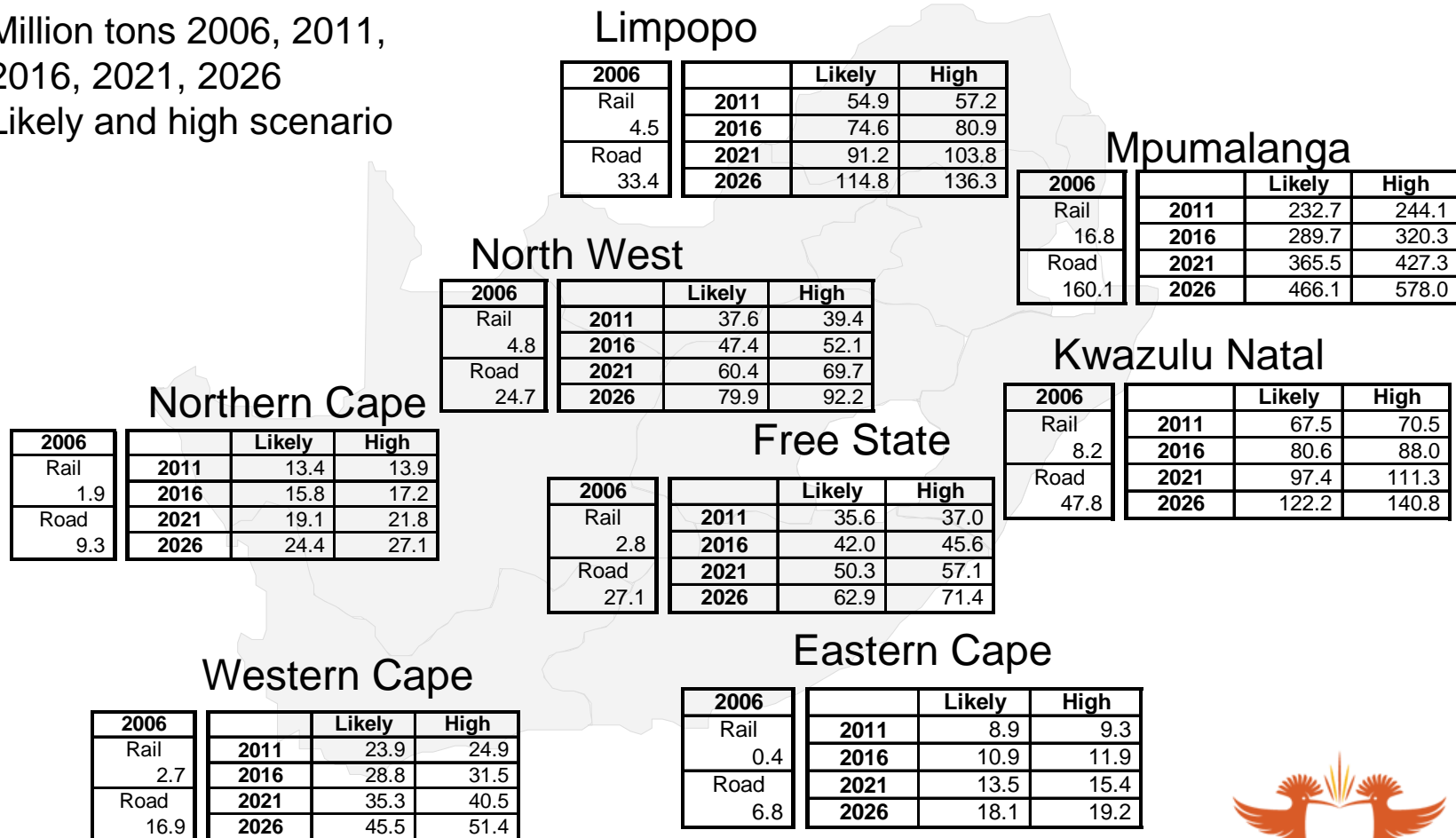


Source: Centre for Supply Chain Management, University of Stellenbosch

RURAL FREIGHT IS EXPECTED TO EXHIBIT STRONG GROWTH

(Source: Overview of Transnet 3 April 2008. Presentation to TransportSIG by Mr I Naidoo)

Million tons 2006, 2011,
2016, 2021, 2026
Likely and high scenario



Rural freight demand is primarily a road demand but rail based solutions are possible where infrastructure is already installed



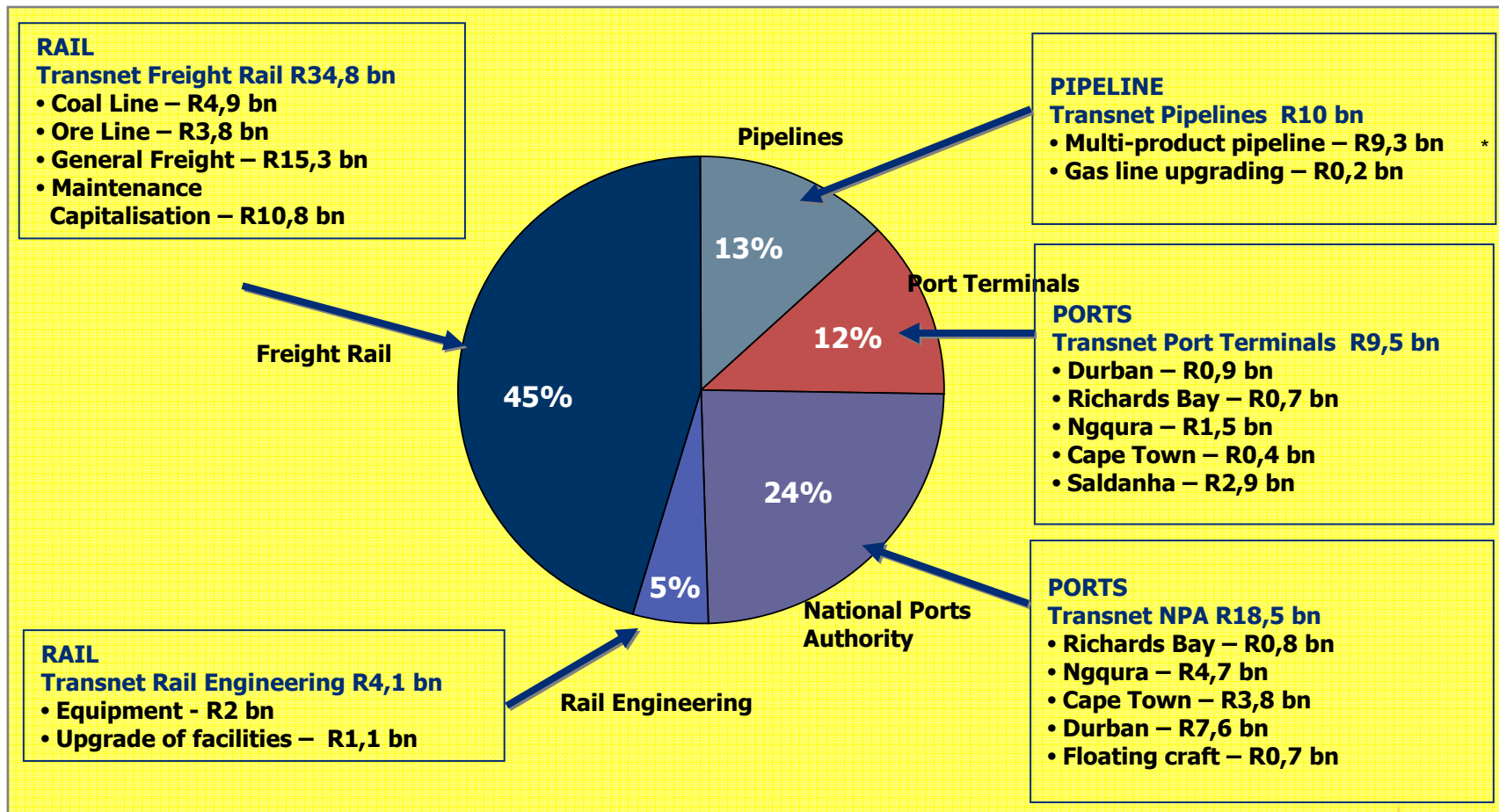
INTEGRATED AND COORDINATED ACTION IS NECESSARY TO MEET THE CHALLENGES BY:

- ❑ Implementing a high performance rail corridor backbone for the country ***that will start to recapture corridor market share from road and provide the capacity to meet the long term demand for freight in the economy.***
- Operating the ports in a complementary manner to make the port system more efficient, increase maritime connectivity and reduce ocean freight rates
- Integrating physical, financial and information flows along the supply chain to ease the administrative burden of trade and create greater visibility and responsiveness within industry supply chains.
- ❑ **Formulating and implementing integrated service strategies for key customer segments to realise the synergies of the port, rail and pipeline systems.**
- Enhancing the connectivity of the South African freight system with the regional freight system



CAPEX SPENDING (CONTINUING BUSINESSES) (THE CAPITAL SPENDING PROGRAMME HAS SINCE 2008 BEEN INCREASED SUBSTANTIALLY)

FIVE-YEAR PLAN: R78 BILLION (Source: Overview of Transnet 3 April 2008. Presentation to TransportSIG by Mr I Naidoo)



* Latest estimate R11.2bn

SOME OF THE OTHER CHALLENGES FACING FEED TO FOOD SUPPLY CHAINS

- Port operations
- Cross-border operations
- Intermodal facilities

SO WHAT ARE THE HIGH LEVEL TRENDS FOR ROAD FREIGHT IN SOUTH AFRICA?

- ❑ Road freight will continue to dominate both the corridor and rural freight transport market
 - This is an international trend and not only limited to South Africa
 - There are however efforts overseas to entice road freight traffic back to rail
 - In South Africa more and more calls are made to “force” certain categories of cargo back to rail
 - This will be disastrous to the economy if Transnet is unable to render similar levels of service to the road transport operators
- ❑ A disturbing trend is the growth of the rural road transport market over the last five years
 - Our rural road system is not capable of handling these huge increases in heavy road traffic.
 - Road maintenance has fallen way behind
 - Road capacity expansion in the rural areas (especially rural arterial roads) are wholly inadequate
 - There is a sense that much of this growth may be coming from the mining, agricultural and manufacturing sectors



SO WHAT ARE THE HIGH LEVEL TRENDS FOR ROAD FREIGHT IN SOUTH AFRICA?

- The DOT's Freight Logistics Strategy's objective to concession rural rail lines may influence modal shares but it is unlikely if there is no real effort to bring all the role players in the rail value chain together
- Is this really enough to change the poor performance of rail transport in the country?
- If it is inevitable that rural road transport will continue to grow and that rail will not be a major role player, then we need to embark upon road improvements on a larger scale – major provincial and non-corridor national roads
- This implies a **dual transport strategy** – one to focus on the corridor traffic and the other on the rural traffic in an effort to reduce the logistics costs to the country.
- At present the only visible strategy is focused on the corridors

SO WHAT ARE THE HIGH LEVEL TRENDS FOR ROAD FREIGHT IN SOUTH AFRICA?

- ❑ Rail in itself, due to its modal characteristics, will find it difficult to render the required services in a logistics-driven economy. This is evident from the surveys mentioned before.
 - Part of the solution should be to collaborate much more closely with the private sector (cargo owners, road transport operators, forwarding and clearing agents, shipping lines etc.) in the rendering of especially corridor rail services.
 - This collaboration should extend to all rail services and involve PPPs, through concessioning of rail operations and infrastructure
 - This may present opportunities for large logistics service providers to enter the realm of the intercity rail freight business

WHAT ARE THE DANGER SIGNALS FOR ROAD TRANSPORT IN ITS CURRENT FORM?

- A lack of governmental understanding about the essential role that road transport plays in this and the sub-Saharan economy (the high cube container issue over December 2009 as well as the poorly conceived banning of trucks in the peaks are recent examples)
- One of the outcomes may be poorly developed policy interventions to “re-balance” the road/rail modal shares
- A lack of consultation with the industry – it’s difficult to change a policy direction once it’s been through governmental machine
- Regulatory intervention to force some cargo traffic back to rail without proper consideration of the intended and unintended consequences of such decisions (thinking through policy options and strategies)
- There are however many examples of bulk cargo that should be on rail and not on the road
- High speed rail between Durban and Johannesburg?
- New pipeline capacity between Durban and the Reef
- Environmental concerns
- Finite oil reserves etc.

SOME CONCLUSIONS

- ❑ There should be a greater awareness of the role of road freight transport in keeping supply chains (and the country) moving
- ❑ The current rail/road freight modal split is not out of line with international developments –rail can simply not fulfill the needs of a demanding modern logistics society
- ❑ There is no “road/rail” debate – in essence it’s a rail debate – how to focus rail on the areas where it has a role to play and to improve its service offering
- ❑ Large logistics service providers should become part of the rail solution by becoming concessionaires, investors and operators
- ❑ Policy actions and strategies should be informed by peer reviewed research
- ❑ There should be closer collaboration between industry and government to avoid “knee jerk” policy actions
- ❑ A dualistic national strategy is needed to address the transportation issues of the country on the main freight corridors and rural services
- ❑ Supply chain risk management, especially at the macro level should be a normal business process

**Thank you
QUESTIONS?**

