
Macro-economics, food security and logistics costs – a need for change

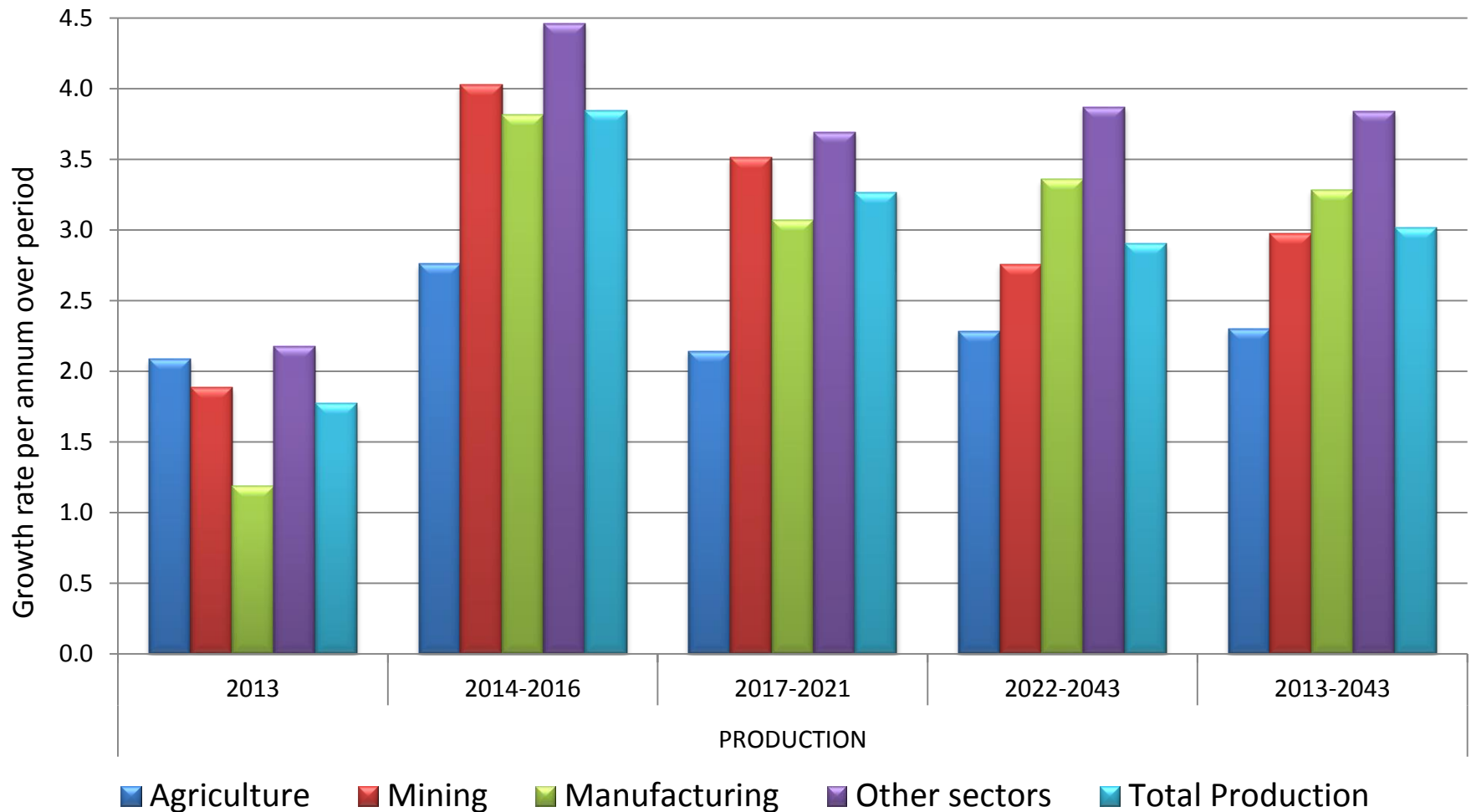
Grain logistics workshop

Nadia Viljoen, 11 February 2015

GAIN – what we do

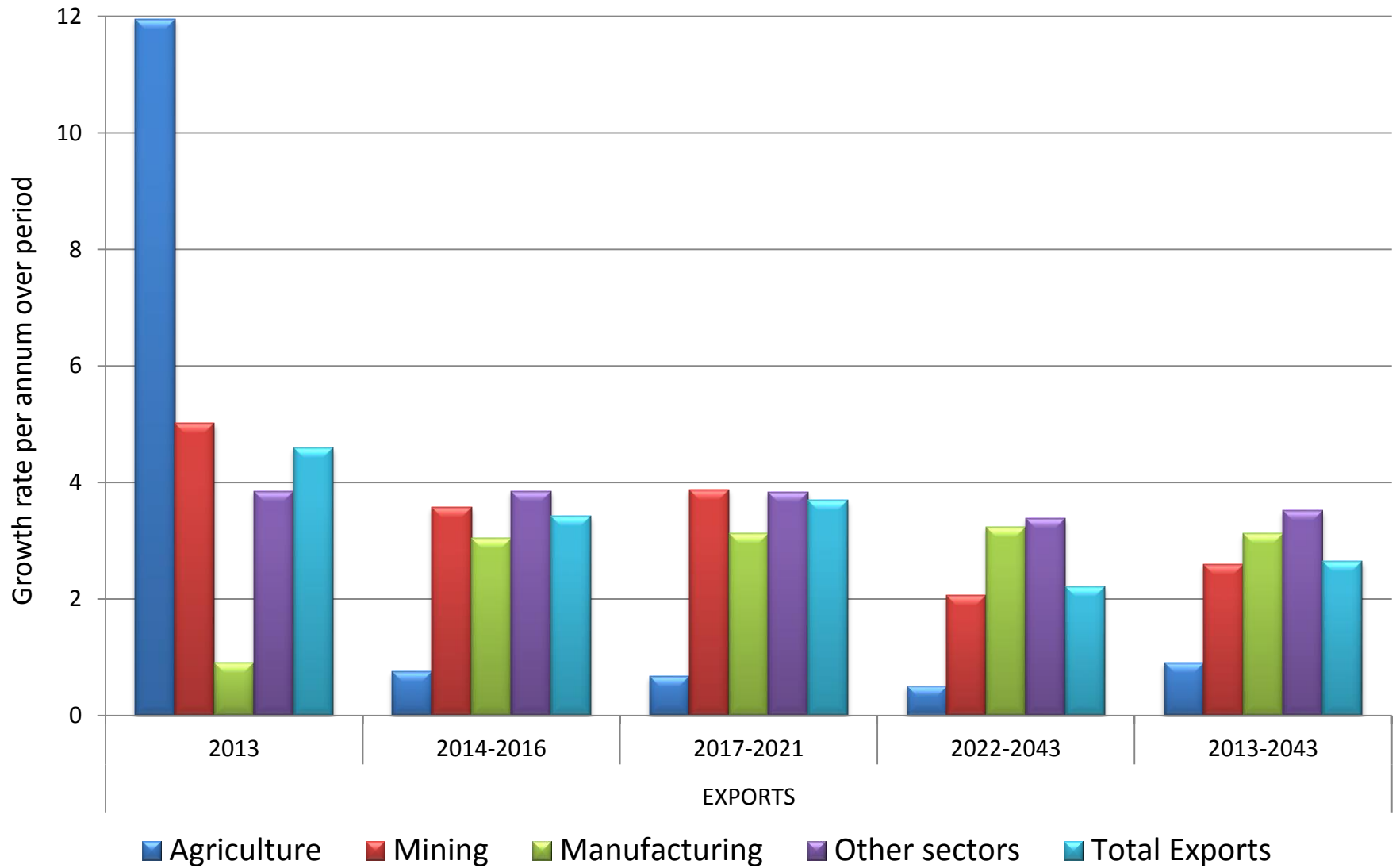
- Boutique consultancy that focuses on multi-disciplinary contract research
- Our local customers include Southern African governments and their agencies and other international entities (government or otherwise) that require insight regarding a specific freight industry, freight transport mode or the trade and logistics characteristics of a geographic region in Sub-Saharan Africa.
- In addition, international customers who wish to develop a similar body of knowledge for their respective territories.
- Data-rich freight flow and logistics cost models that take a bottom-up approach to modelling macro-level dynamics in South Africa and 17 Sub-Saharan African countries.
- Strong ties with the University of Stellenbosch has led to the annual publication of our results in the CSIR's State of Logistics™ survey for the past 10 years.

Production growth rates per sector

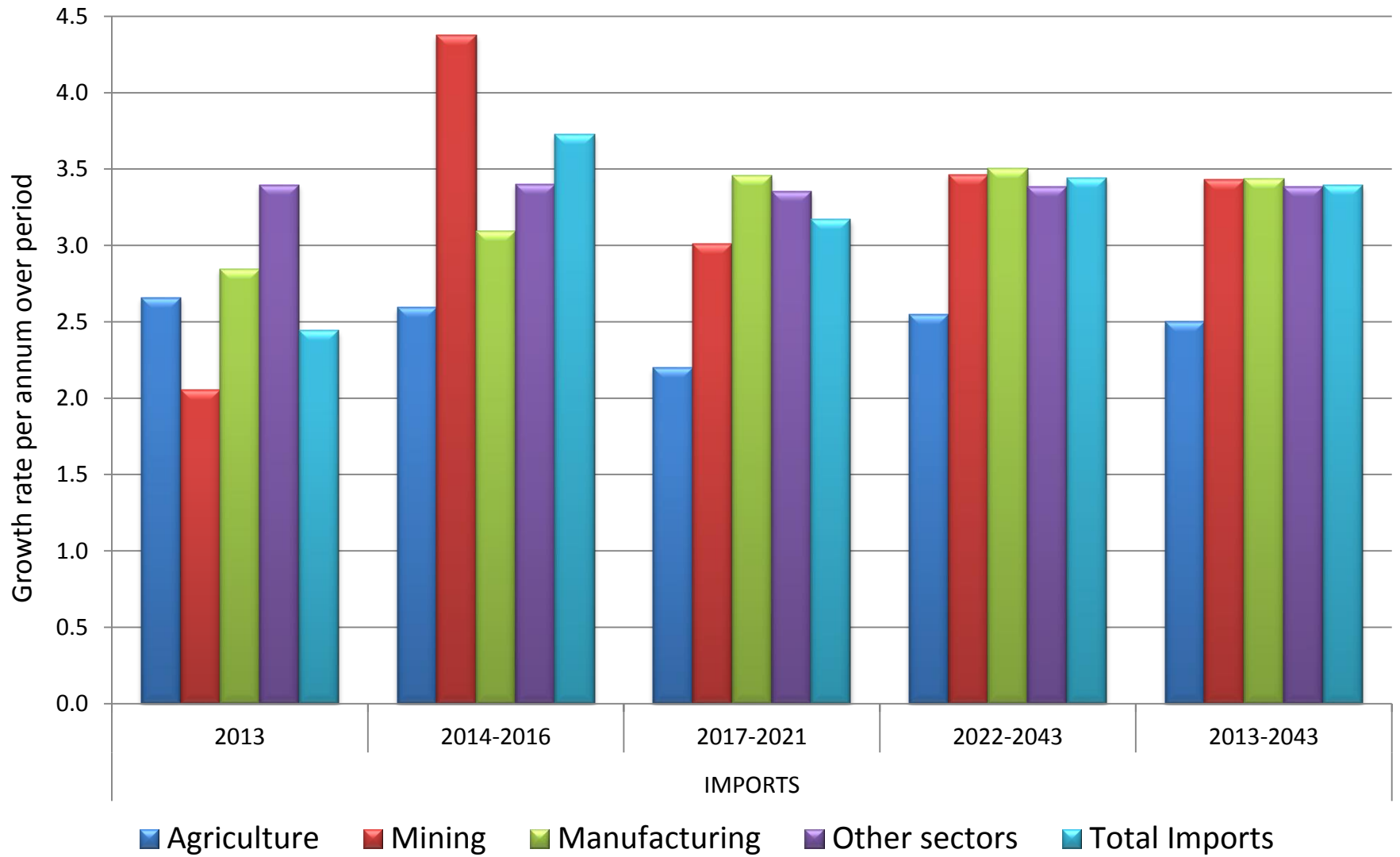


The long term growth for the manufacturing and services is higher, but South Africa will still be highly dependent on mining and agriculture for the next decade – thereafter the beneficiation strategy must kick in

Exports



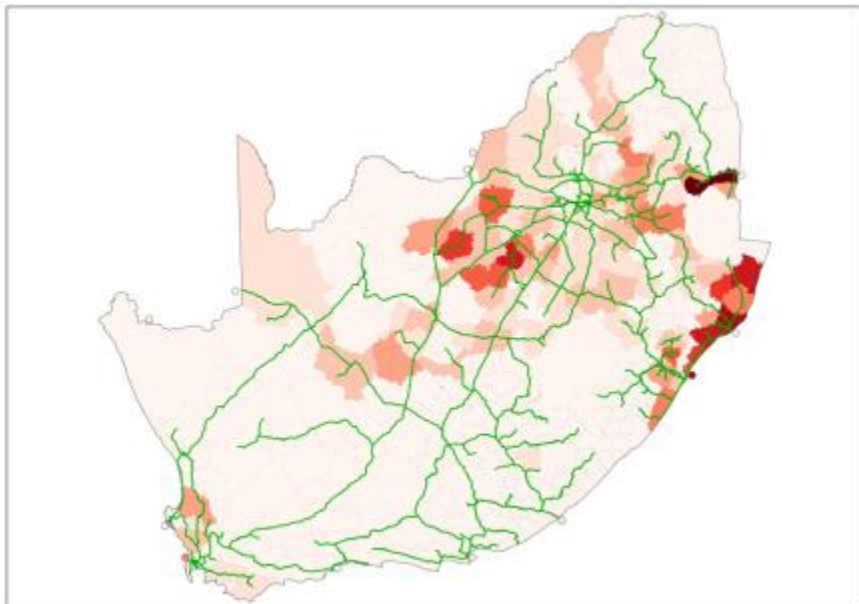
Imports



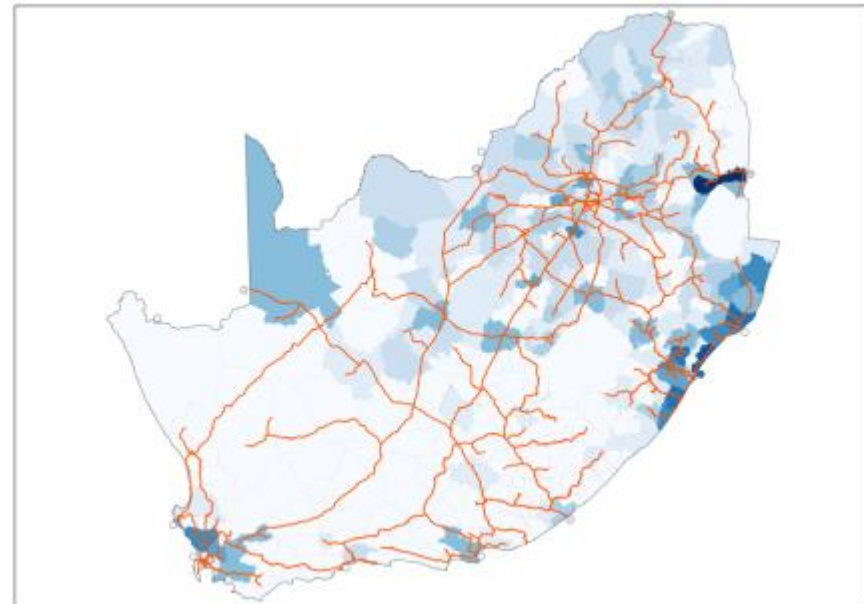
Demand and supply

Demand and supply – All commodities

Supply



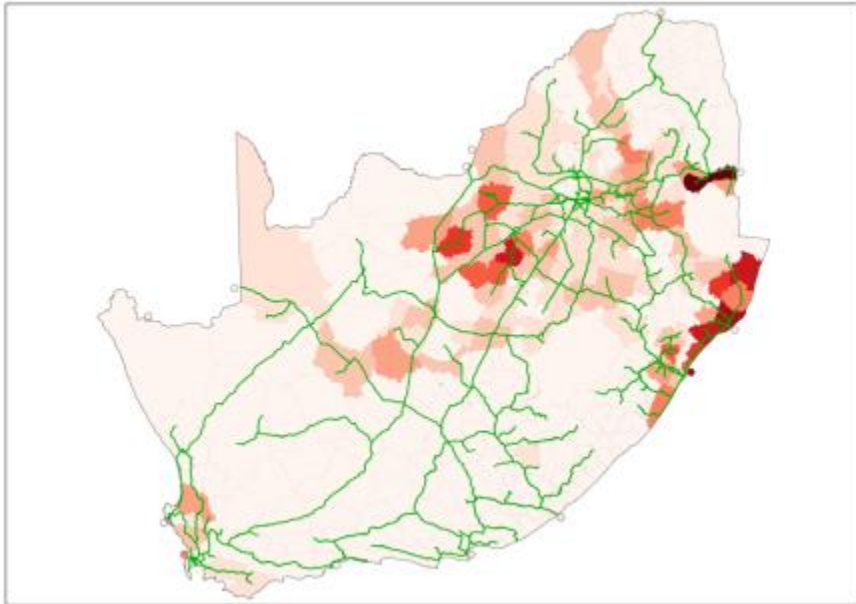
Demand



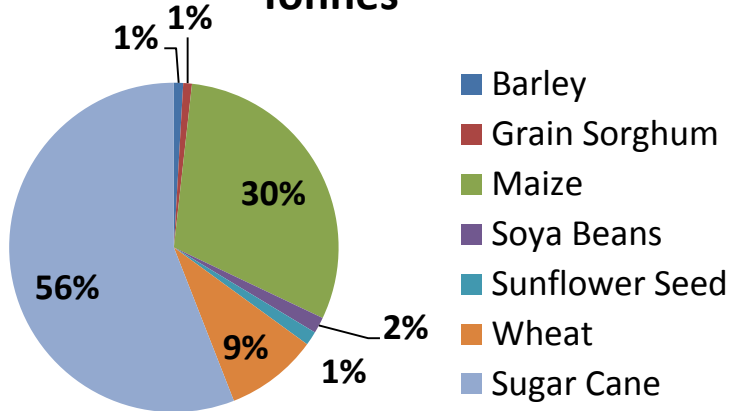
| | Total | 2028 | 2043 |
|----------|---------------|-------------------------|--------------------------|
| Tonnes | 40 000 000 | 54 000 000 (135%) | 75 000 000 (186%) |
| Tonne-km | 8 000 000 000 | 8 300 000 000 (104%) | 10 500 000 000 (132%) |

Demand and supply – All commodities

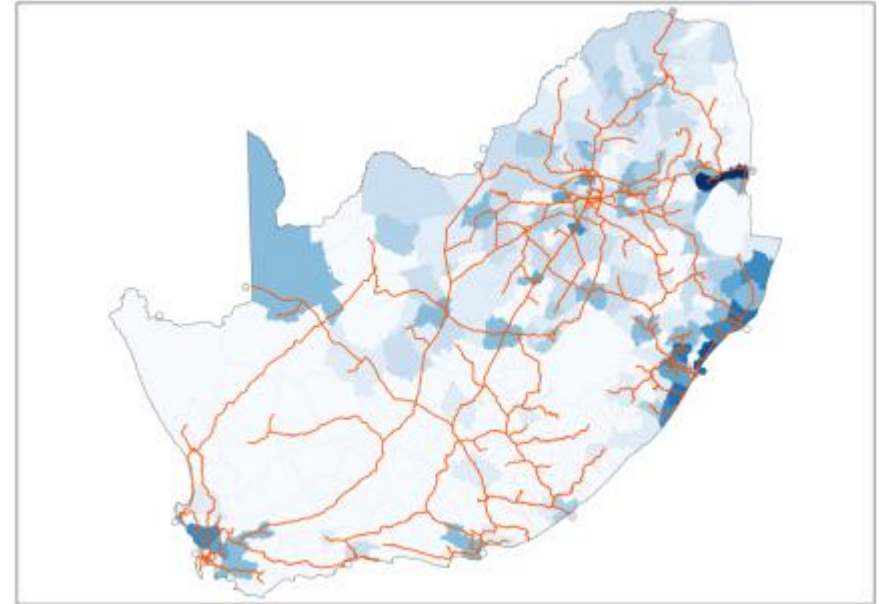
Supply



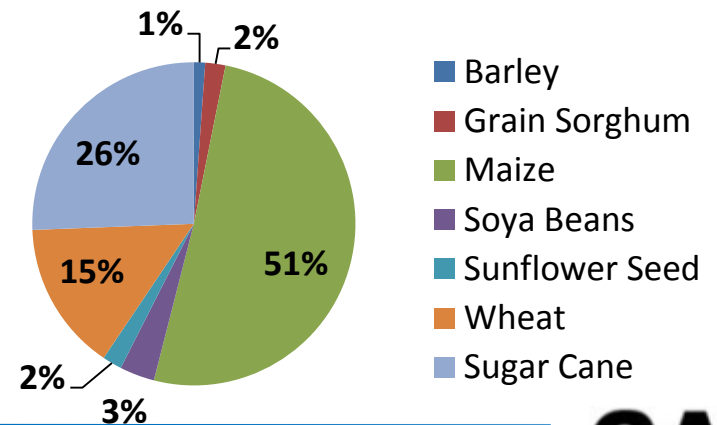
Tonnes



Demand

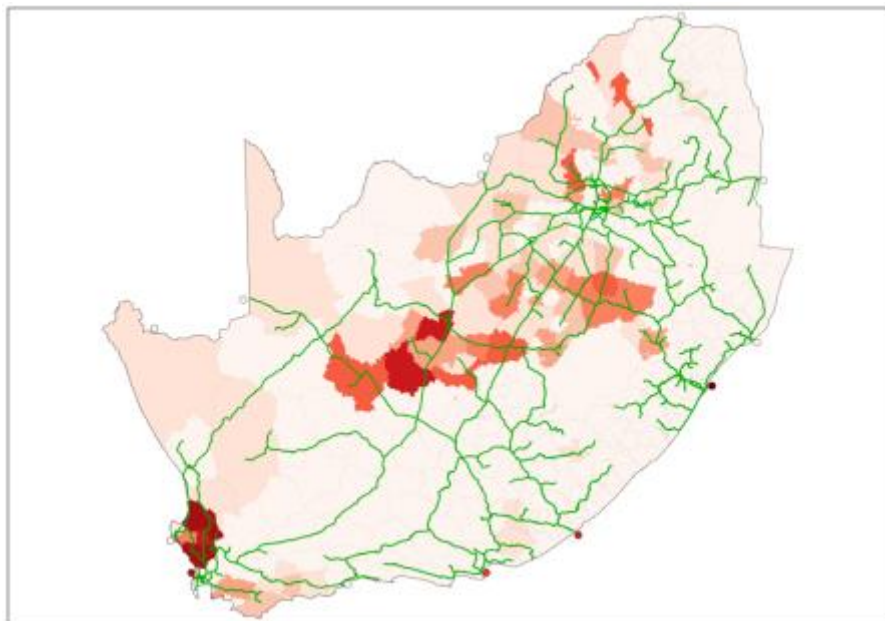


Tonne-km

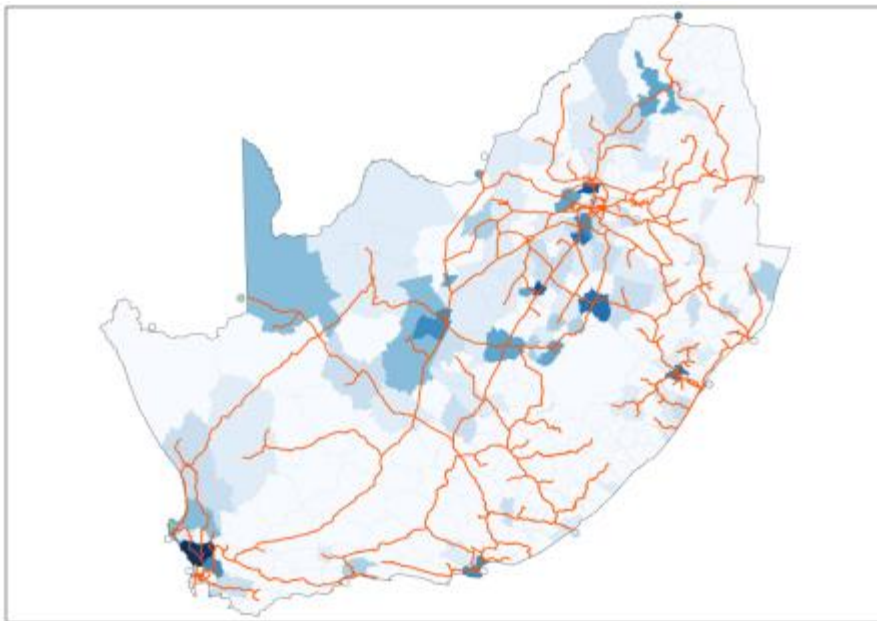


Demand and supply – Wheat

Supply



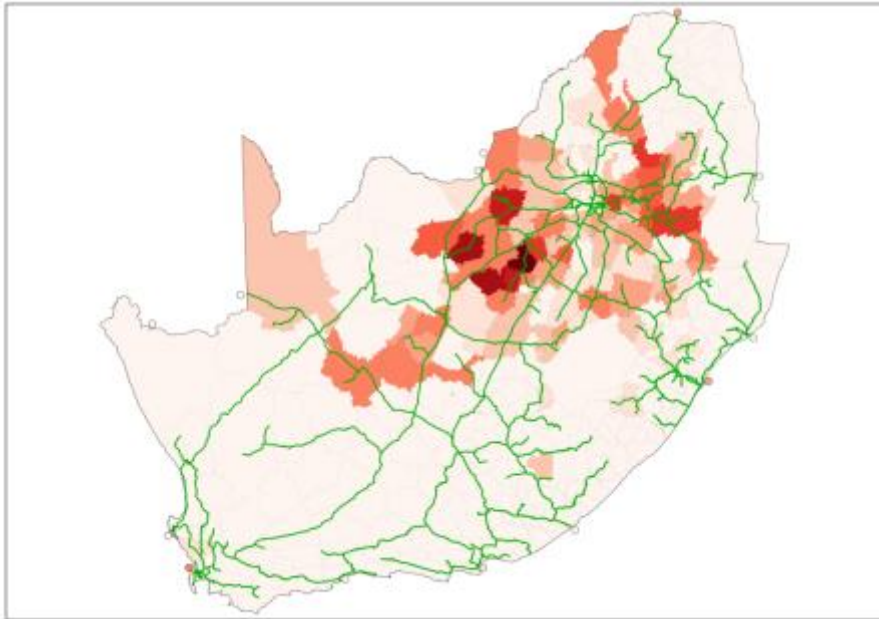
Demand



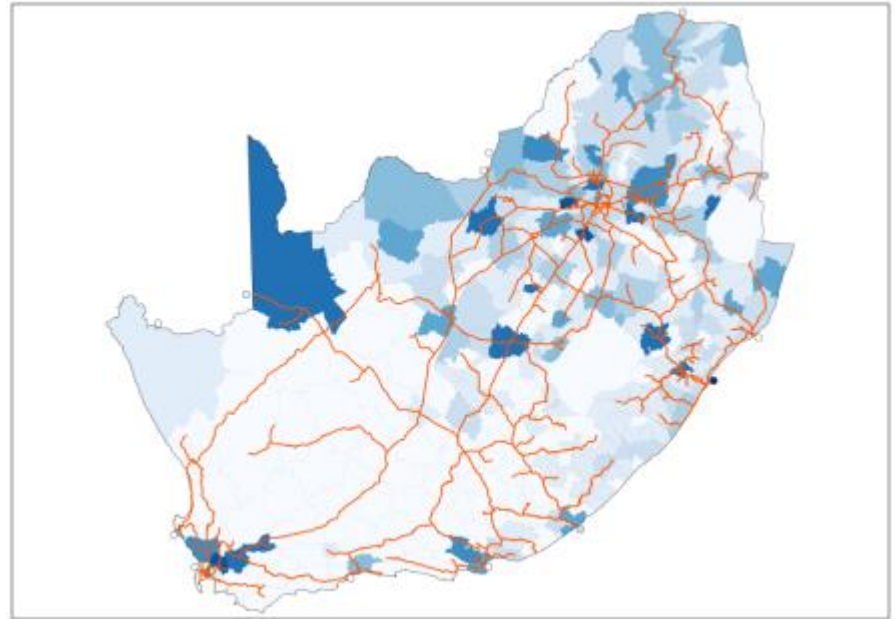
| | Total | 2028 | 2043 |
|-----------------|---------------|--------------------------------|--------------------------------|
| Tonnes | 3 600 000 | 4 900 000 (136%) | 6 700 000 (186%) |
| Tonne-km | 1 200 000 000 | 1 200 000 000 (100%) | 1 800 000 000 (150%) |

Demand and supply – Maize

Supply



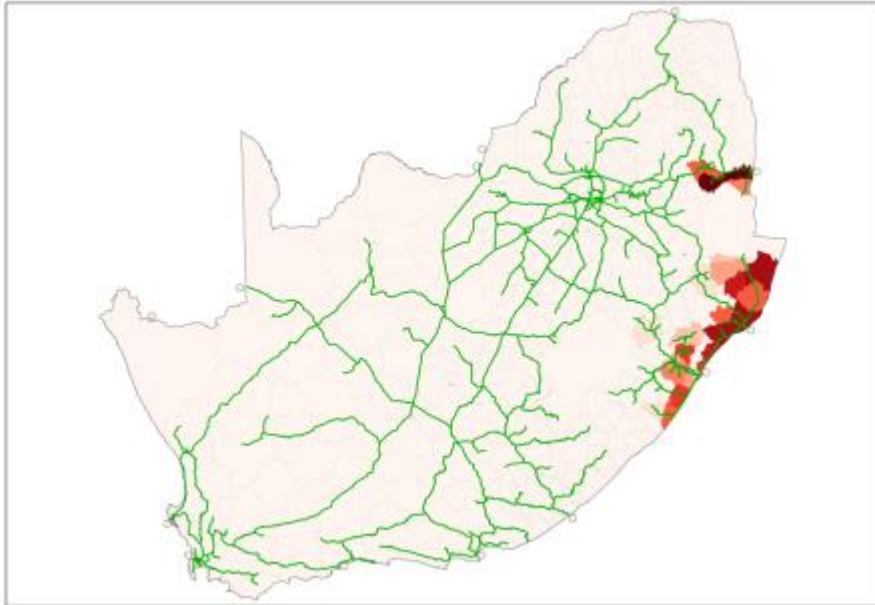
Demand



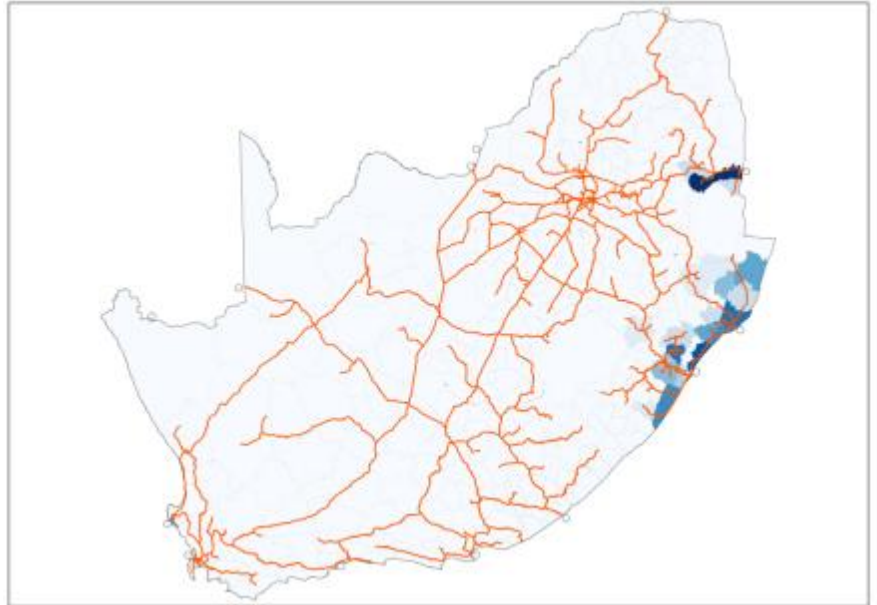
| | Total | 2028 | 2043 |
|-----------------|---------------|------------------------|-------------------------|
| Tonnes | 12 200 000 | 16 100 000 (132%) | 21 400 000 (175%) |
| Tonne-km | 4 100 000 000 | 4 000 000 000 (98%) | 5 100 000 000 (124%) |

Demand and supply – Sugar cane

Supply



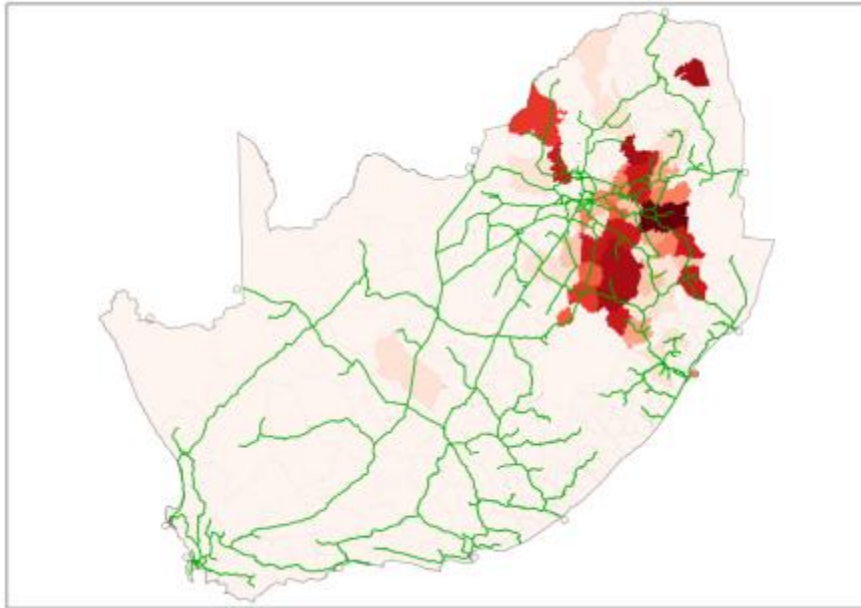
Demand



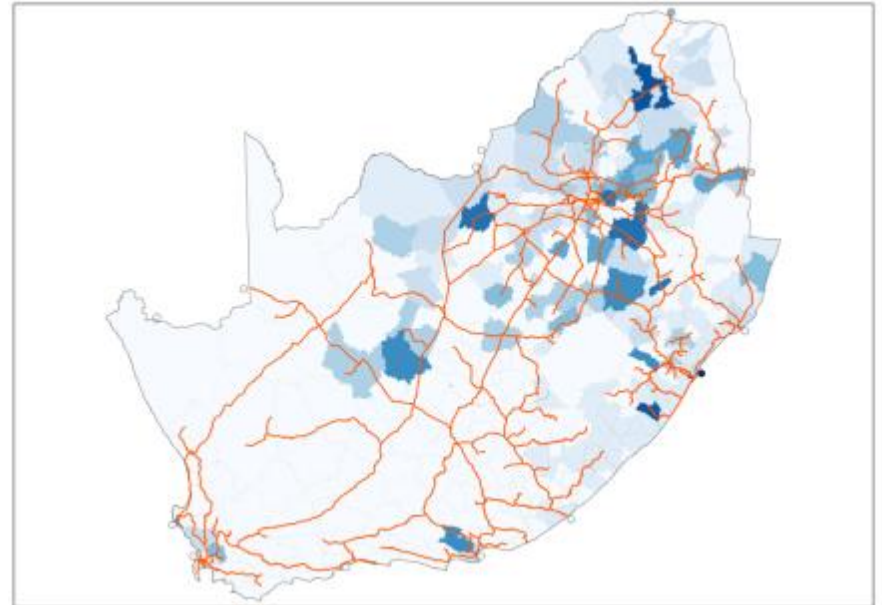
| | Total | 2028 | 2043 |
|-----------------|---------------|-------------------------|-------------------------|
| Tonnes | 22 500 000 | 30 700 000 (136%) | 42 900 000 (191%) |
| Tonne-km | 2 000 000 000 | 2 200 000 000 (110%) | 2 500 000 000 (125%) |

Demand and supply – Soya beans

Supply



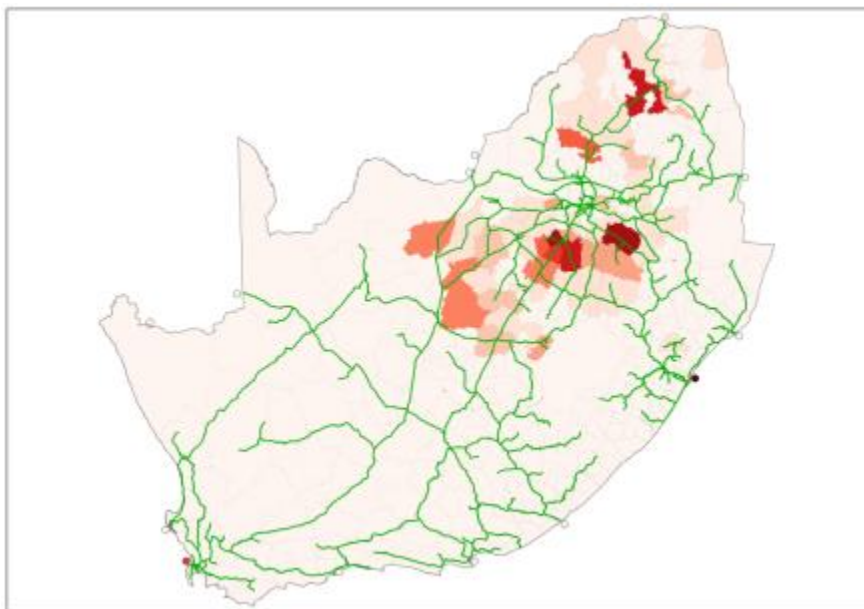
Demand



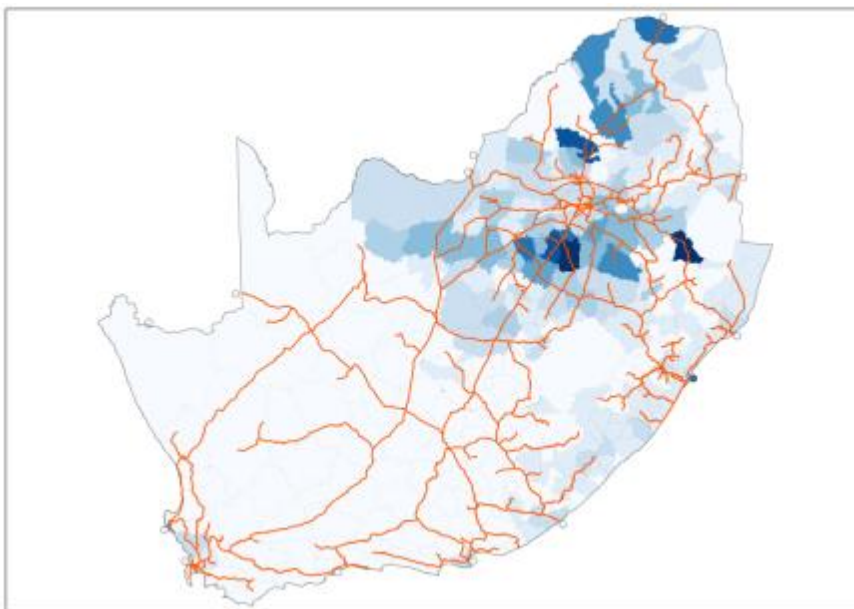
| | Total | 2028 | 2043 |
|----------|-------------|-----------------------|-----------------------|
| Tonnes | 600 000 | 800 000 (133%) | 1 100 000 (183%) |
| Tonne-km | 280 000 000 | 350 000 000 (125%) | 450 000 000 (161%) |

Demand and supply – Grain sorghum

Supply



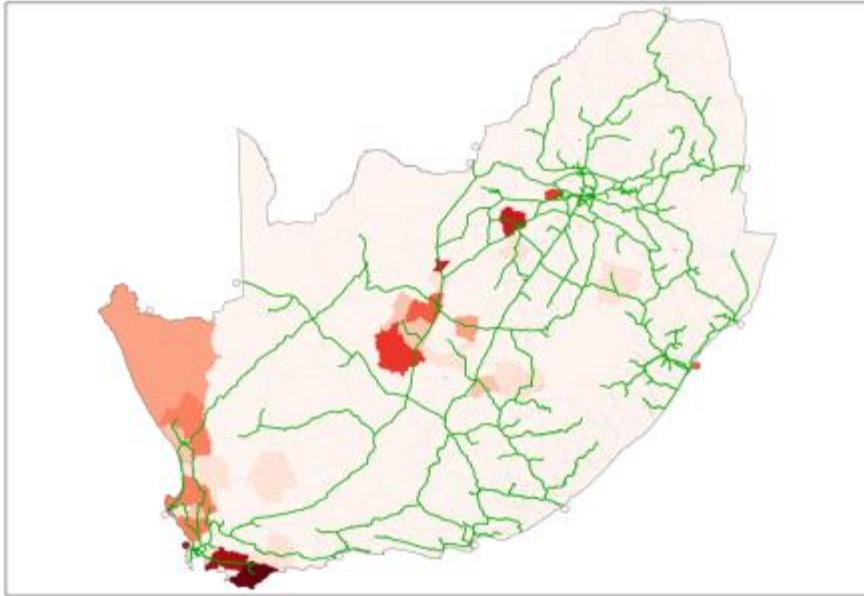
Demand



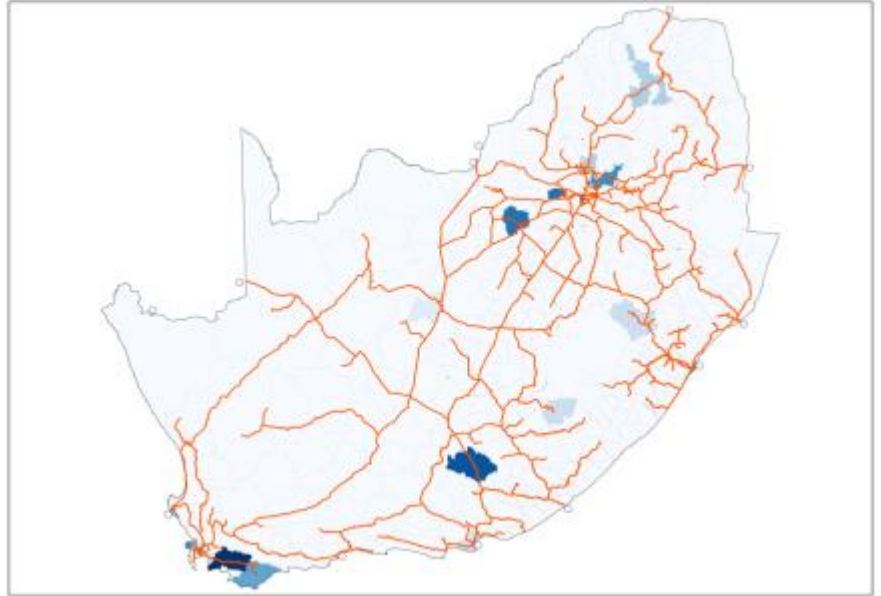
| | Total | 2028 | 2043 |
|----------|-------------|-----------------------|-----------------------|
| Tonnes | 300 000 | 500 000 (167%) | 700 000 (233%) |
| Tonne-km | 160 000 000 | 210 000 000 (131%) | 300 000 000 (188%) |

Demand and supply – Barley

Supply



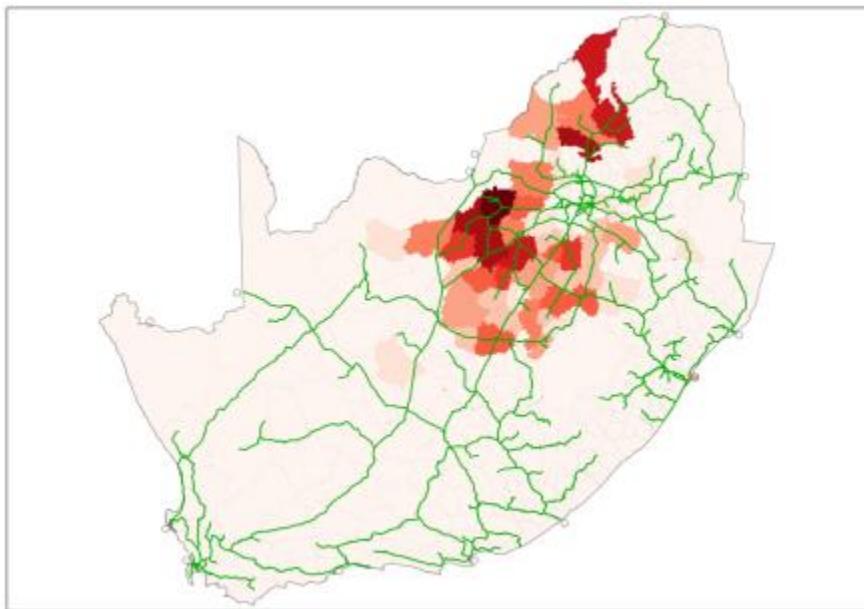
Demand



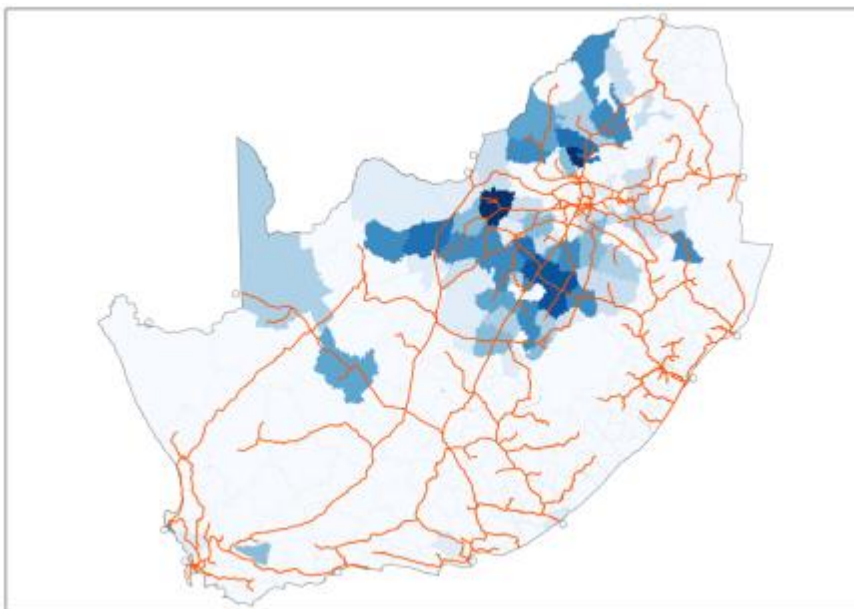
| | Total | 2028 | 2043 |
|----------|------------|---------------------|-----------------------|
| Tonnes | 400 000 | 500 000 (125%) | 800 000 (200%) |
| Tonne-km | 90 000 000 | 74 000 000 (82%) | 110 000 000 (122%) |

Demand and supply – Sunflower seed

Supply



Demand

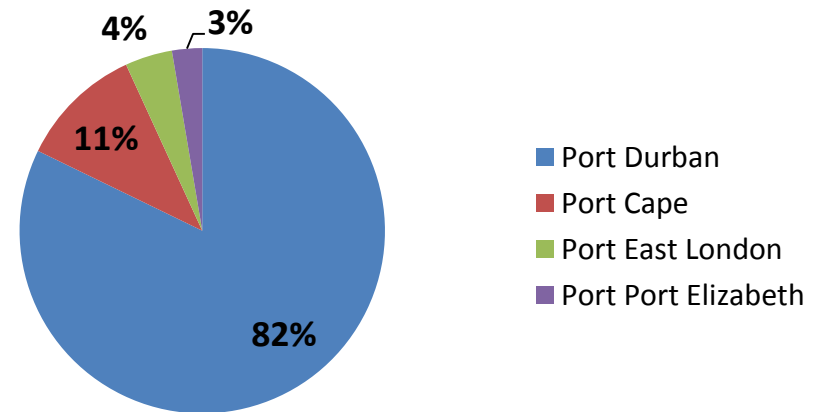
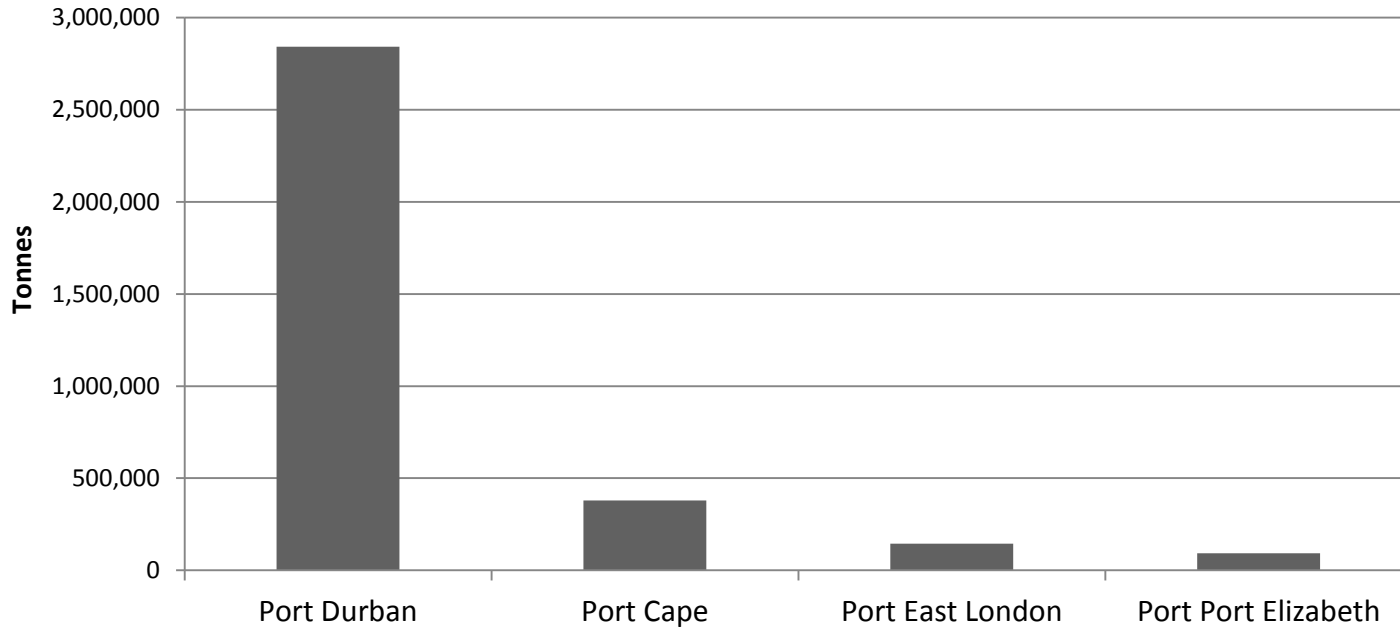


| | Total | 2028 | 2043 |
|----------|-------------|-----------------------|-----------------------|
| Tonnes | 600 000 | 800 000 (133%) | 1 100 000 (183%) |
| Tonne-km | 160 000 000 | 210 000 000 (131%) | 300 000 000 (188%) |

Imports and Exports @ Ports

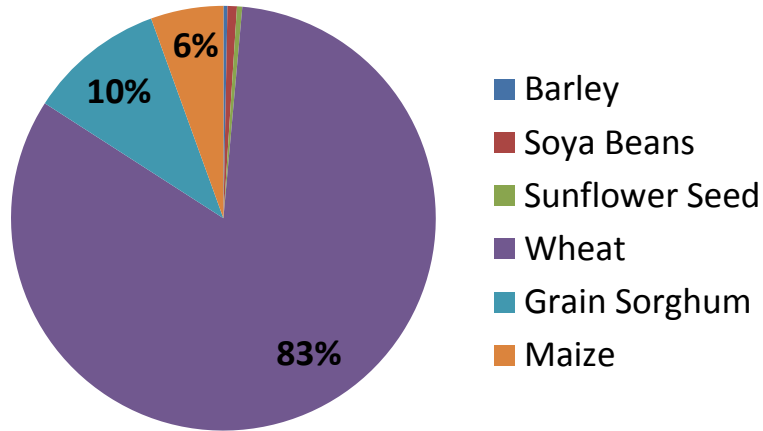
Tonnes split between ports

Tonnes moving through ports

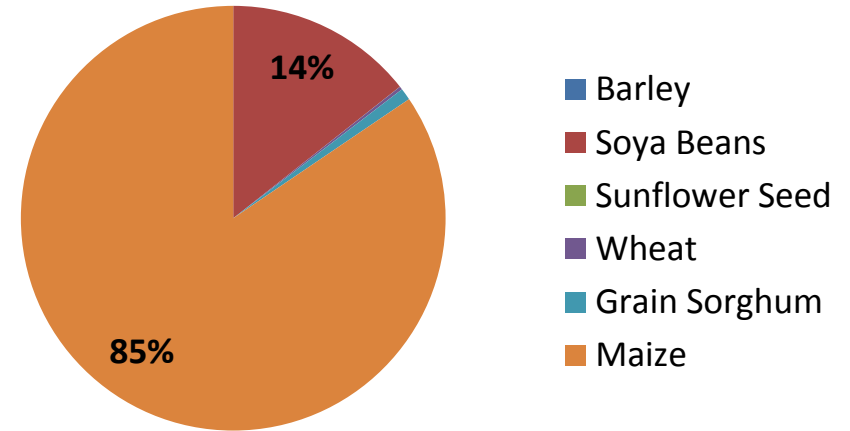


Port of Durban

IMPORTS



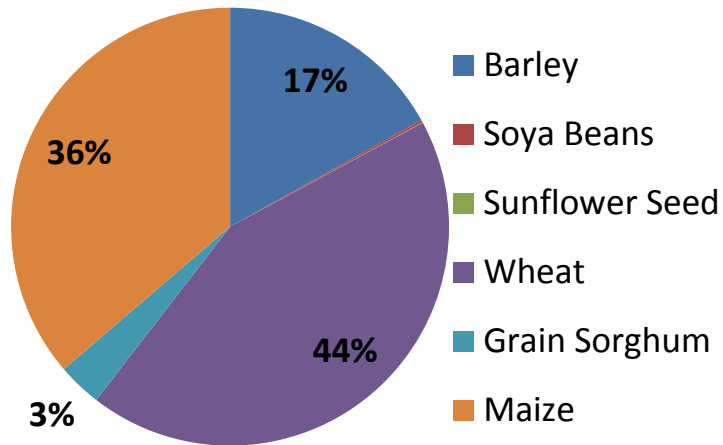
EXPORTS



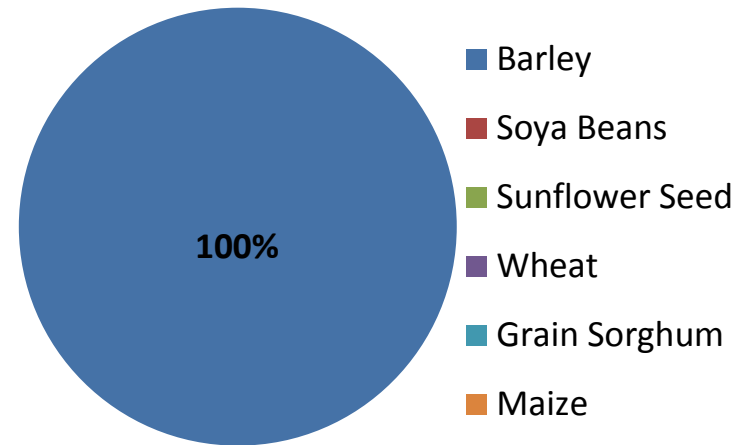
2.5% Containerised

Port of Cape Town

IMPORT



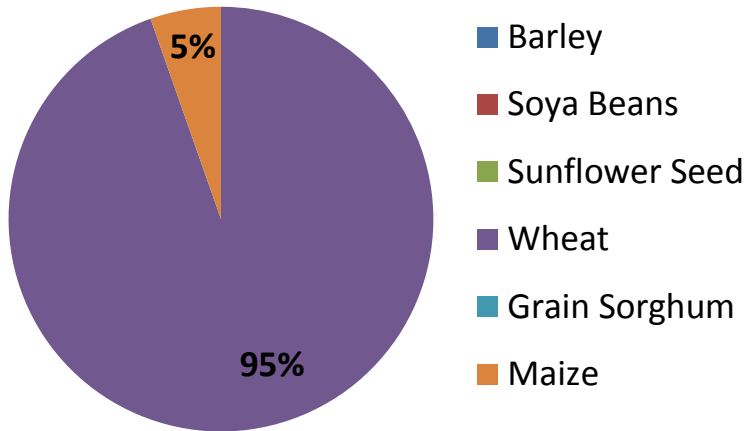
EXPORT



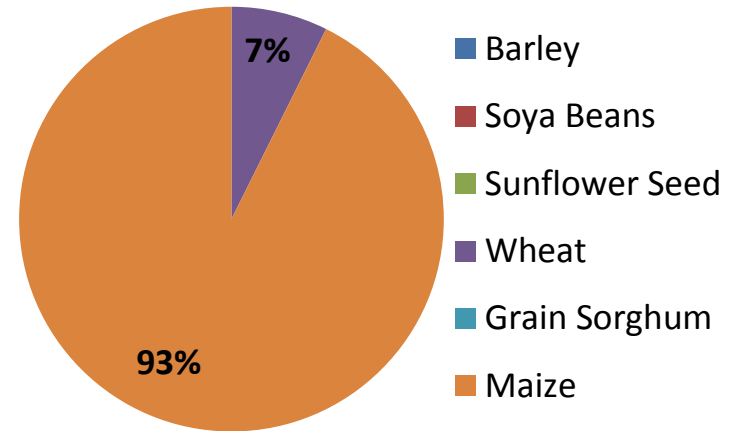
1.2% Containerised

Port of East London

IMPORTS



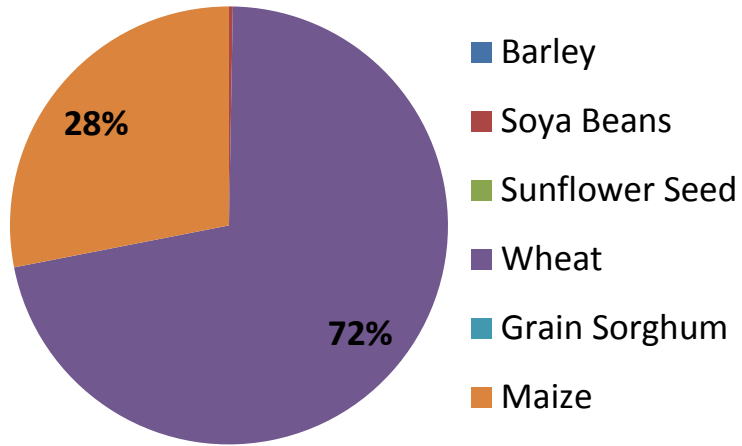
EXPORTS



0% Containerised

Port of Port Elizabeth

IMPORTS

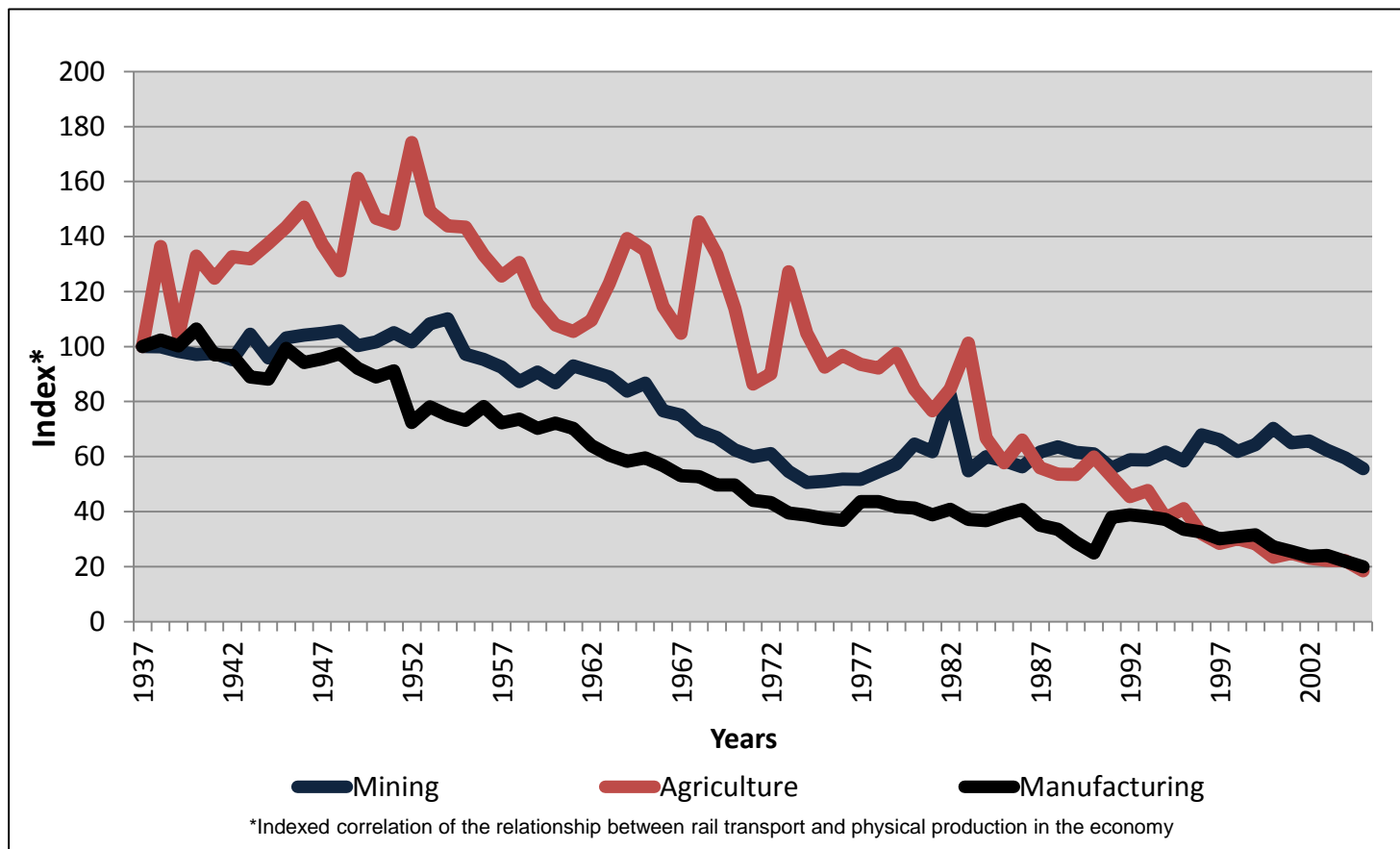


4.1% Containerised

Freight flows & logistics costs

Rail's role in the transportable economy over the past 70 years

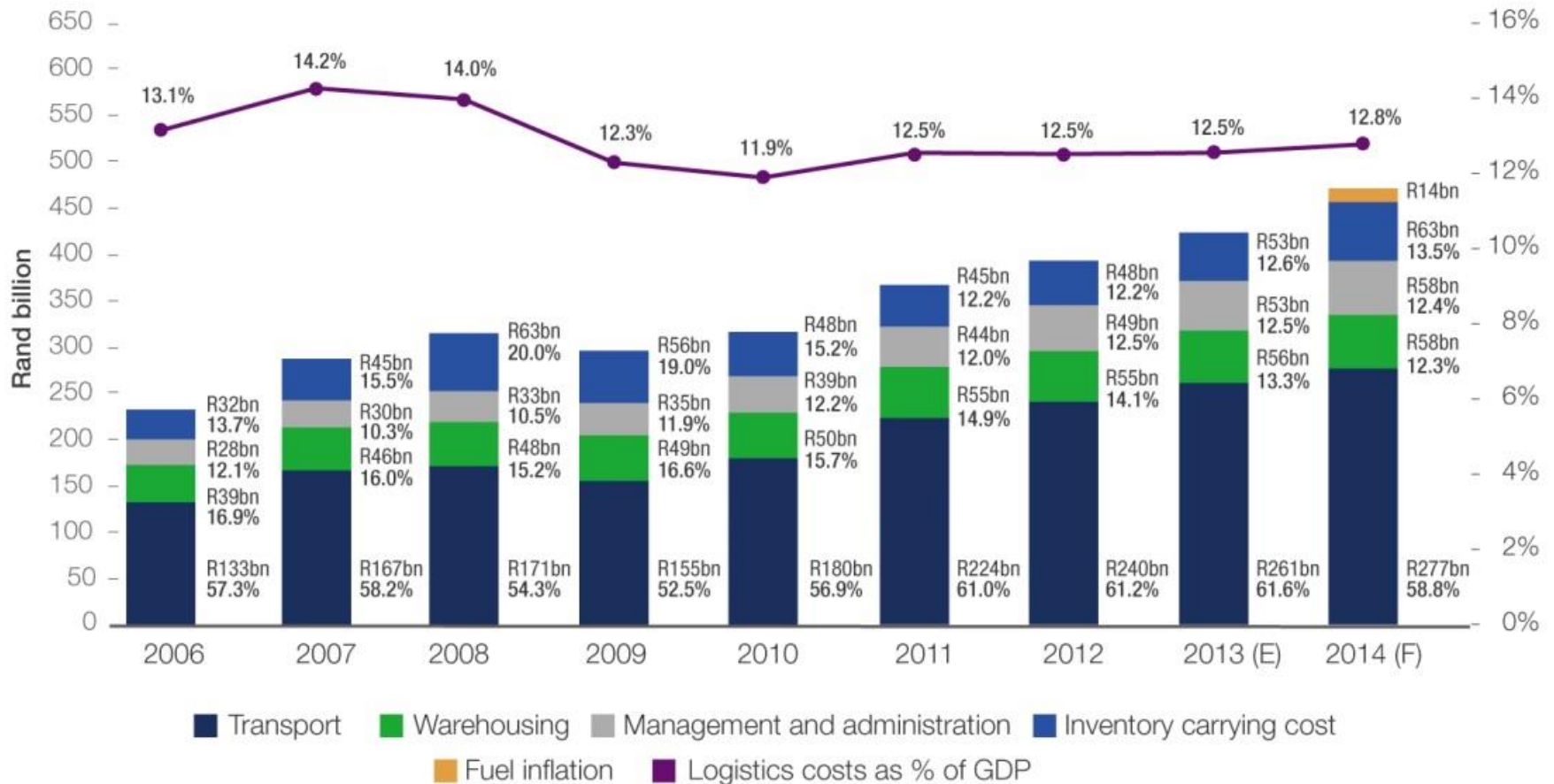
- Rail's transported tonnes related to GDP have decreased as follows:
 - Mining: 40%
 - Agricultural & manufacturing: 80%



10th State of Logistics™ results

FIGURE 1: Total national logistics costs and the components from 2006 – 2014 (F).

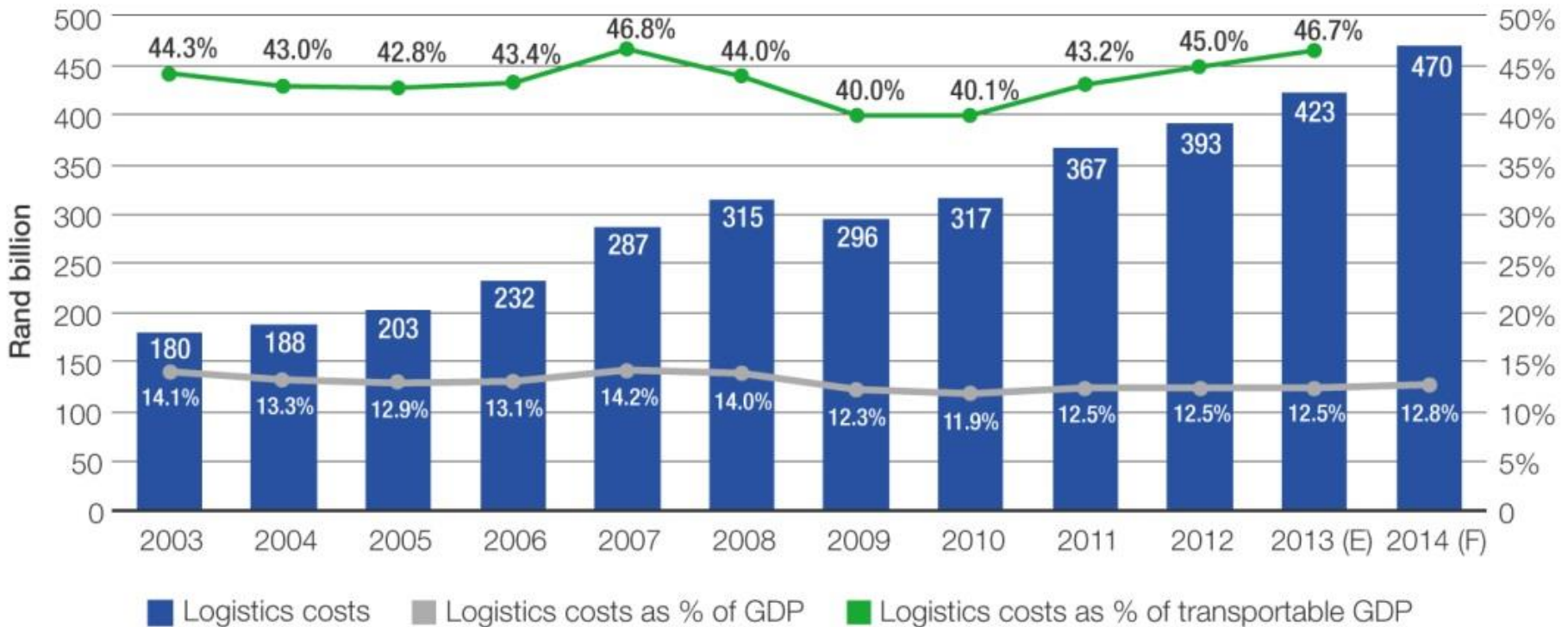
Source: Stellenbosch University



10th State of Logistics™ results

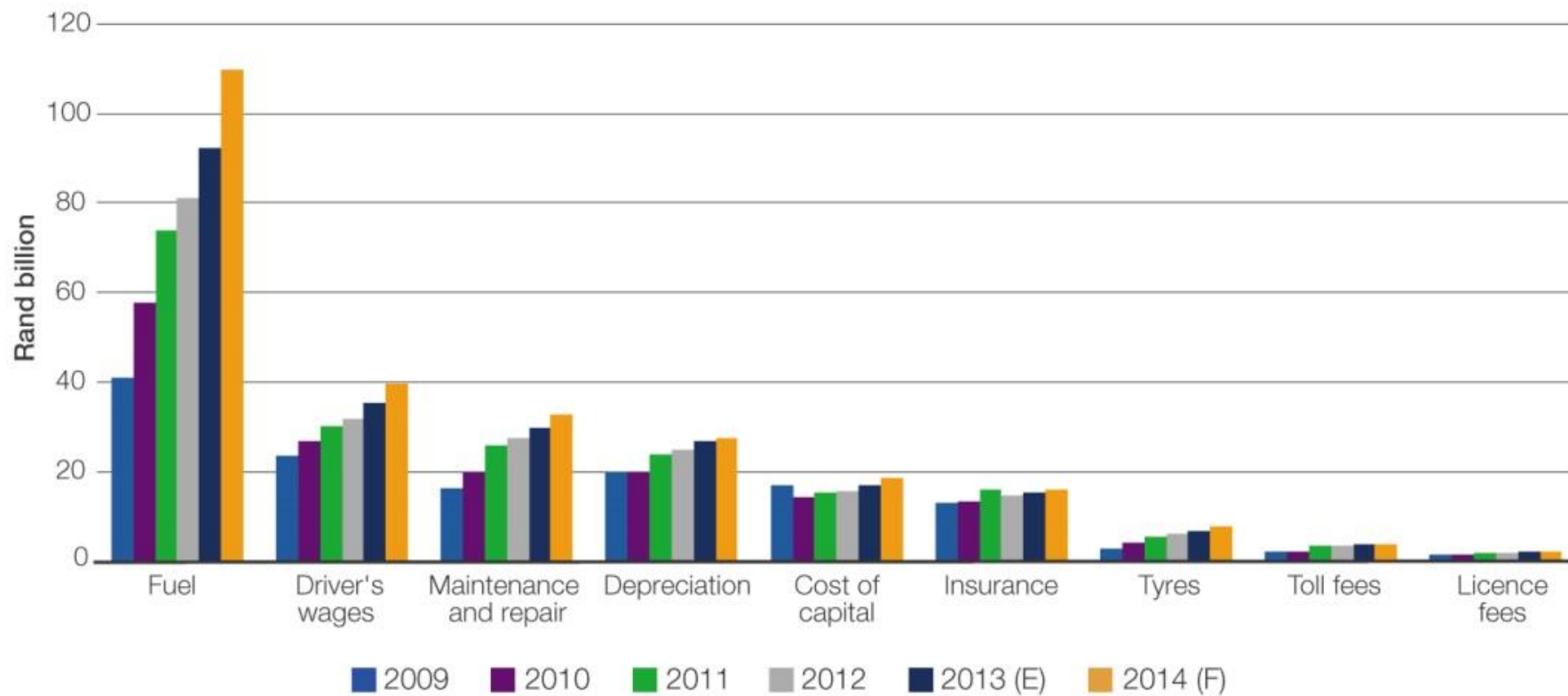
FIGURE 3: Logistics costs as a % of total and transportable GDP.

Source: Stellenbosch University.



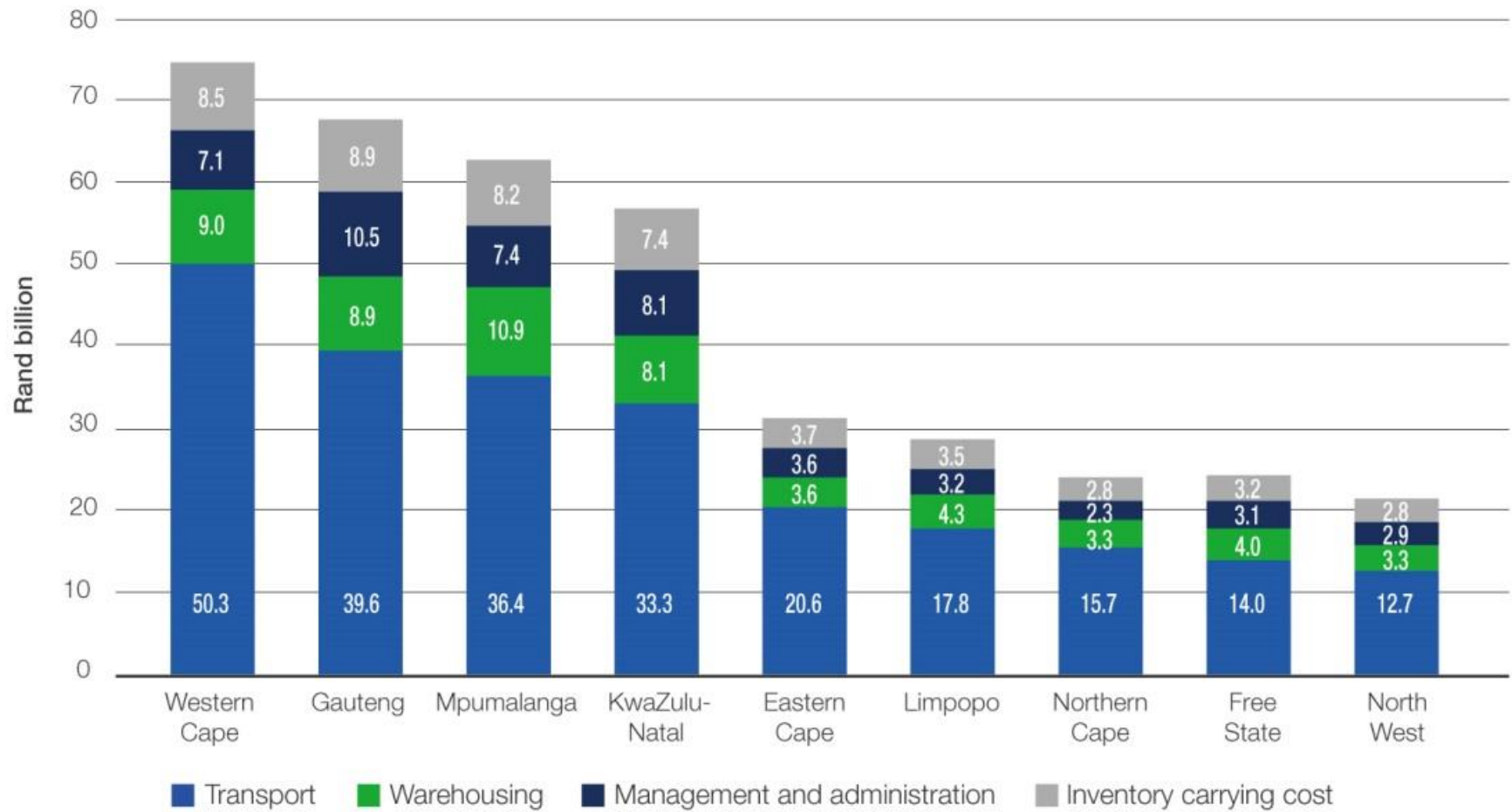
10th State of Logistics™ results

FIGURE 17: Components of transport costs. Source: Stellenbosch University.



10th State of Logistics™ results

FIGURE 15: Provincial logistics costs, 2012. Source: Stellenbosch University.



Transport costs for grain in 2012

| | Total | Wheat | Maize |
|--------------------------|------------------|------------------|------------------|
| Value | R 46,884,769,413 | R 11,367,785,687 | R 22,871,885,985 |
| Transport costs | R 9,207,002,922 | R 1,135,864,157 | R 5,997,417,854 |
| Externality costs | R 1,484,417,741 | R 182,683,612 | R 831,031,509 |

**Excluding port dues and tariffs*

A need for change

- **The reality of the road-rail split.** *What is required for change?*
- **Agricultural beneficiation.** *What are the opportunities?*
- **Food security.** *Is SA heading into trouble?*