Chapter 1
Introduction

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Abstract This book provides policy framework on "towards a Green Economy in the Transport Sector" draws inspiration from the UNEP report on Green Economy Modeling (2014), which focused on South Africa with respect to Transport, Natural Resource Management, Agriculture, and Energy sectors. This is because in the last 10 years natural resources, environmental risks and ecological issues have come to the attention of the international community because the subject is fundamentally important for overarching sustainable growth. It is important to note that environmental problems such as greenhouse gas emissions and climate change in different regions of the world including South Africa result in significant problems. However, the challenges can provide an opportunity to do things differently. Further to this in 2010, South Africa hosted the Green Economy Summit to set up the stage for the formulation of a Green Economy Plan. In line with this, the choice for a New Growth Path (NGP) was formulated and it was aimed at creating new green jobs in their thousands by 2020. It was in this context that the NGP policy framework on green economy in the transport sector was envisaged to respond to the request by Transport Education and Training Authority (TETA) to assess potential opportunities and policy levers to inform a green economy in the transport sector. The findings from the desktop research, the stakeholder workshop and the field survey reports form the basis from which the policy framework recommendations in this report were made.

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1.1 Vision

The proposed vision of the policy framework recommendations are in line with suggestions made in 2013 by South African Green Economy Modelling report (SAGEM) (UNEP 2013). It was based on system dynamics modeling aimed at exploring new opportunities in a green economy in the transport sector. In view of this, the suggested vision for 'towards a green economy in the transport sector is as follows:

A transport sector that promotes energy efficiency, reduces per capita km traveled, enhances innovations, creates new green jobs, ensures modal integration, increases investment opportunities, enhances new skills development, reduces CO2 emissions, uses renewable energy resources and light material to build vehicles.

1.2 Strategic Objectives

In view of the vision suggested above, the strategic goals of the policy framework recommendations are outlined as follows:

- Access to affordable public transport
  To ensure that commuters have access to mass transit modes of transport and services with opportunities for modal integration and choices.
- Smart transport logistics
  To ensure integrated land use planning and smart transport management for modes of transport such as the Bus Rapid Transport (BRT).
- Shift to environmentally friendly transport
  To promote environmentally friendly transport modes to ensure transport demand management, efficiency and provision of pedestrian and cycling lanes and shift to alternative fuels.
- **Improve funding in green transport initiatives**
  Increase capacity of sustainable transport and funding mechanisms to leverage green transport modes.
- **Promote skills development**
  Explore new ways to promote new skills and green jobs in the transport sector to ensure access to jobs in the value chain of green transport.

In view of the importance of finding the right balance between an intensive transport sector and the need to adopt green transport innovations to ensure sustainable development in South Africa, it is important to explore a new policy framework to inform a new path for the creation of new green jobs and the initiation of investment opportunities. This policy framework recommendation explores new opportunities with respect to green economy in the transport sector. To put this policy framework in the context of the green economy, the report identified six policy framework levers as follows:

- Environment, climate change and the green economy,
- Transport modes and the green economy,
- Technology innovation in the green economy,
- Vehicle management, emission control and maintenance,
- Regulatory framework in the transport sector, policies and standards, and
- Skills and knowledge transfer.

It was based on the policy framework levers identified through literature review, workshop with the stakeholders and the field survey report that the policy levers findings and recommendations were drawn. The six policy levers were proposed on the understanding of the following:

I   .**Access** that forms the basis for increased ridership in green transport modes,
II   .**Logistics** that integrates smart transport into human settlements,
III .**Shift** towards environmentally friendly transport modes,
IV   .Increased capacity for sustainable transport modes, and
V   .Development of **new skills** and the creation of new jobs in the green transport sector.

1.3   The Approach to the Policy Recommendations

The approach to which the findings and recommendations outlined in this document centers on was aimed at aligning the six policy levers to skills development in the transport sector, creation of new job opportunities, reduction in CO_2 emissions, increased intermodal transport choices, smart transport logistics such as the Bus Rapid Transport (BRT), environmentally sustainable transport and shift towards alternative fuel such as electric cars and biofuel. The concept is illustrated in Fig. 1.1.

Figure 1.1 shows the elements required to optimise "towards a green economy in the transport sector". The illustration shows the elements of green transport that can maximise the primary drivers of green transport with respect to the following:

- **Access** to green affordable public transport,
- **Integrated land use** and sustainable public transport,
- Promotion of **efficient and environmentally friendly** modes of transportations,
- **Leverage funding** for investment to improve innovative research and transport technology, and
- **Development and training of new skills** across the value chain towards a green economy in the transport sector.

The framework approach illustrated in Fig. 1.1 should ensure the transition towards a green transport economy in the transport sector as illustrated in Fig. 1.2. The link between the vision and strategic goals and policy levers are clearly shown in Fig. 1.2.

The policy levers include:

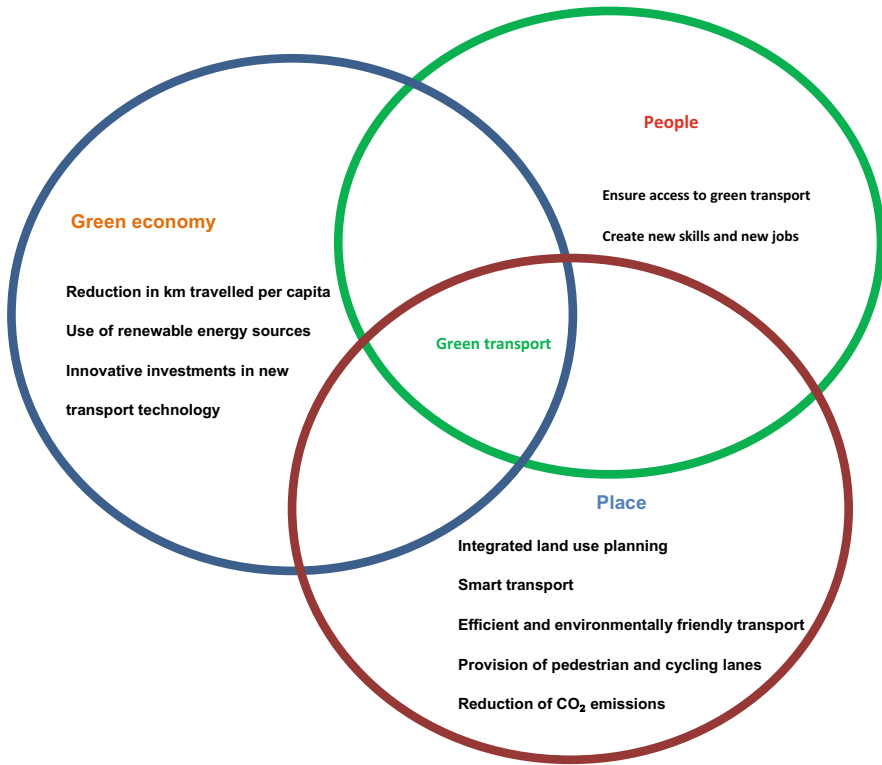**Skills Lever I:** Environment, climate change and the green economy,

Fig. 1.1 Elements required to optimise green transport economy

Skills Lever II: Transport modes and the green economy,

Skills Lever III: Technology innovations in green transport,

Skills Lever IV: Vehicle management and emission control and maintenance,

Skills Lever V: Skills and knowledge transfer for transitioning into the green economy, and.

Skills Lever VI: Regulatory frameworks, policies, norms and standards.

1.4 Case Study

A case study was conducted in Limpopo Province to provide knowledge and evidence on green economy in Limpopo Province with emphasis on transition to green transport. The study was also aimed at identifying short- and long-term recommendations that can assist in transition to green transport. Chapters 2 to 7 are based the case study linked to skills levers I to VI. The case study covered municipalities within selected districts in the Limpopo Province (Table 1.1 and Fig. 1.1). The area is composed
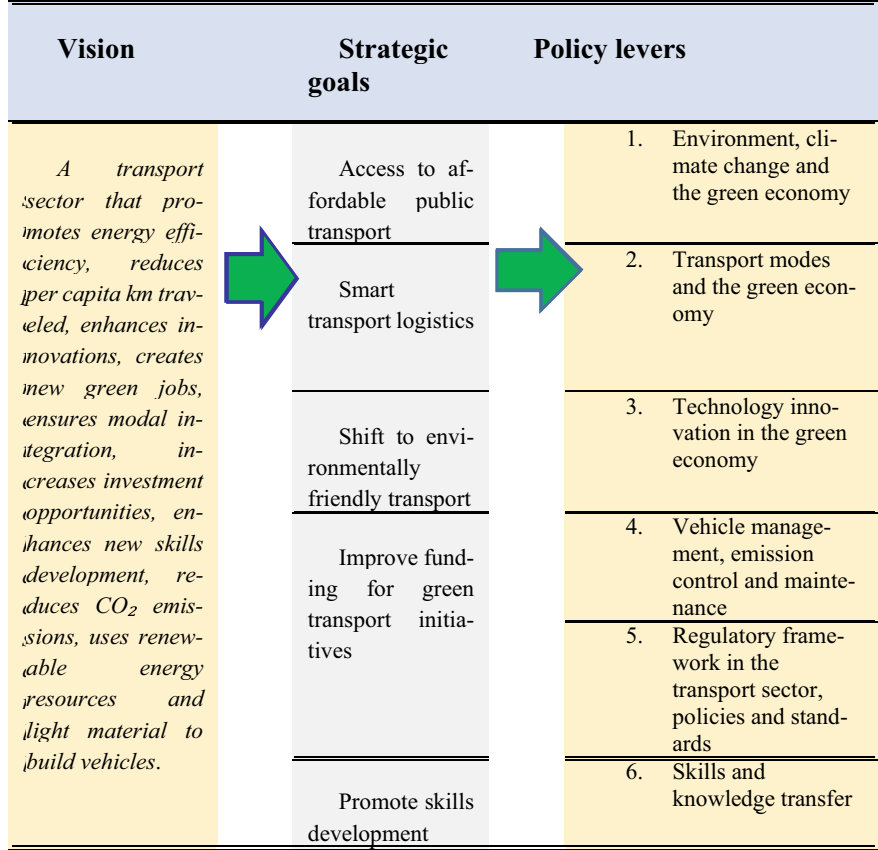
Vision	Strategic goals	Policy levers
A transport sector that promotes energy efficiency, reduces per capita km traveled, enhances innovations, creates new green jobs, ensures modal integration, increases investment opportunities, enhances new skills development, reduces CO$_2$ emissions, uses renewable energy resources and light material to build vehicles.	Access to affordable public transport	1. Environment, climate change and the green economy
	Smart transport logistics	2. Transport modes and the green economy
	Shift to environmentally friendly transport	3. Technology innovation in the green economy
	Improve funding for green transport initiatives	4. Vehicle management, emission control and maintenance
		5. Regulatory framework in the transport sector, policies and standards
	Promote skills development	6. Skills and knowledge transfer

Fig. 1.2 Transition towards a green economy in the transport sector

of predominantly rural communities and hence transition to green economy will be beneficial to these communities.
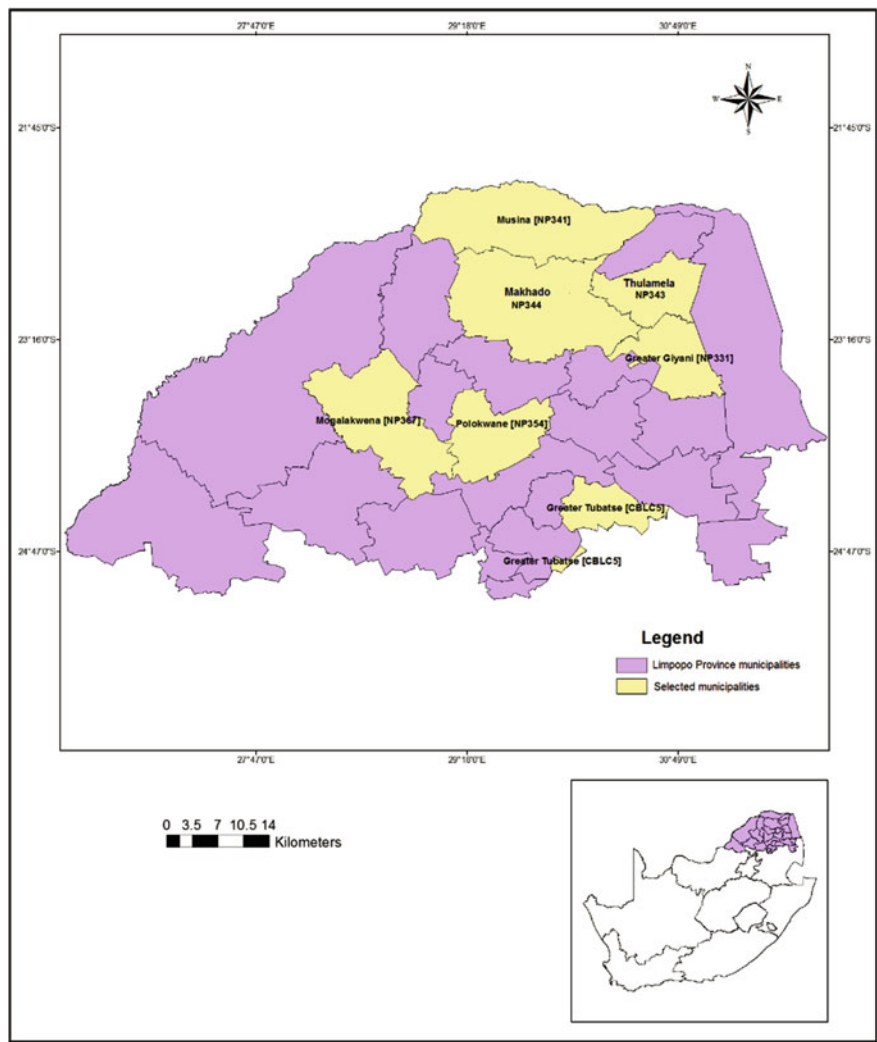
Fig. 1.3 Municipalities covered in the case study

Table 1.1 Areas covered in the case study

Districr	Municipality
Vhembe	Thulamela, Makhado and Musina
Capricorn	Polokwane
Sekhukhune	Greater Tubatse
Waterberg	Mogalakwena
Mopane	Greater Giyani

Reference

United Nations Environment Programme (UNEP), 2013. Green economy modelling report for South Africa: Focus on the sectors of natural resource management, agriculture, transport and energy. Available from: https://www.environment.gov.za/sites/default/files/docs/greeneconomy_modelingreport.pdf, accessed 20 September 2020