



DNA Economics
Making economic sense of common problems

Socio-economic drivers for an inclusive and sustainable growth path

TIPS Annual Forum 2017

13 June 2017

AIMS:

- Look at South Africa's Green Policy Objectives
- Make a comparison across countries (different green growth approaches)
- Examine/'test' potential ways of measuring green growth. i.e. objectives vs indicators

*Presentation
Outline*

Methodological Approach

Broad Methodological approach

- Examine South Africa's Green Policy and Indicators
- Four countries (UNEP, 2015):
 - Ecological Civilization in China
 - Sufficiency Economy in Thailand;
 - Green Economy in South Africa; and
 - Living Well in Bolivia.
- Examination of objectives:
 - Economic
 - Environmental
 - Social
- Comparisons
 - Green Growth Knowledge Platform (GGKP) Indicators

The Green Economy Transition

Key international drivers for the green economy

- The Green Economy concept has its roots in the movement towards sustainable development in the late 1980s (UNDESA, 2012a)
- The 2008 Financial crisis identified as a key catalyst to green economy transition
 - Because the green economy offers an alternative approach with tangible economic, social and environmental benefits through proposed shifts in production and organisation paradigms (UNDESA, 2011; UNEP, 2011; Volkery & Rouabhi, n.d.)
- However, this only possible due to the burgeoning of environmental and climate-change awareness through the 1990s and early 2000s, as can be shown by a series of international milestones

Global Drivers Towards A Green Economy

| Pre-Financial Crisis | Global Financial crisis: Green Economy Transition | Post Global Financial Crisis |
|---|--|--|
| <ul style="list-style-type: none"> • 1987 Brundtland Report • 1992 Agenda 21 • 1992 UNFCC • 1998 Kyoto Protocol • 2004 Greenhouse gas protocol | <ul style="list-style-type: none"> • 2009 Copenhagen Accord • 2009 Green Stimulus Packages • 2009 UNEP Green Economy Initiative | <ul style="list-style-type: none"> • 2010 Green Climate Fund • 2010 Cancun Agreements • 2012 Rio+20 (the green economy in the context of sustainable development) • 2015 Paris Agreement |

Source: Developed based on sources referenced in section 3.1 of the main report

Green Economy Definitions, Principles & Concepts (II)

Core Elements of a green economy

Values natural capital

- Reduce deforestation and increase reforestation and support agriculture and rural livelihoods
- Green agriculture to feed society without compromising natural resource base
- Increase investments in improving water supply and efficiency

Central to poverty alleviation

- Enhance livelihoods in low-income areas by increasing investments into natural assets
- Invest in the provision of clean water and sanitation services to the poor to speed transition
- Renewable energy to eliminate energy poverty
- Tourism development to support local economy and reduce poverty

Enhances social equity-jobs

- Green economy creates at least as many jobs as business-as-usual (BAU)
- Green investments in agriculture, buildings, forestry, water, fisheries and transport sectors grow jobs faster than BAU
- Allocate at least 1% of GDP to energy efficiency and renewable energy
- Waste management jobs increase – decent work challenges

Uses renewable energy

- Renewable energy presents major economic opportunities.
- Government policy has an essential role to play in enhancing incentives for investing in renewable energy.

Promotes resource efficiency

- Challenges and opportunities in Manufacturing
- Produce wealth using less material/energy resources
- Decouple waste from economic growth and raise living standards
- Recycling and energy recovery from waste are profitable
- Reduce waste and increase efficiency in agriculture to increase food security

Sustainable urban living

- Green cities: efficient and productive
- Building sector in green cities is key
- Cost saving through new green buildings and retrofitting existing energy-and-resource intensive buildings
- Energy efficiency in the transport sector, adopting clean fuel and shifting from private to public and non-motorized transport can deliver significant economic and health benefits.

Source: UNEP (2011b)

Best practices in Green Economy Conceptualisation

- From 9 international best practice guidelines, we have discovered 8 of the most common characteristics required for green economy implementation roadmaps

| Characteristic | Number of supporting best practice guidelines |
|--|---|
| 1. Integrate planning with a long-term vision and the engagement of all key stakeholders | 6 |
| 2. Focus on net job creation and the upliftment of communities through education and skills training | 6 |
| 3. Mix of policies that explicitly consider trade-offs and cross-sectoral linkages | 5 |
| 4. Spur Innovation | 4 |
| 5. Focus on conservation and efficient use of natural resources | 5 |
| 6. Leverage short-term public finance while ensuring long-term economic viability | 5 |
| 7. Invest in ecological infrastructure and ecosystems services | 6 |
| 8. Mainstream green economy considerations into all areas of policymaking | 3 |

Approaches to Green Economy Development

Environmental

Developmental

Objectives

Energy supply security

Protect environment

Climate change objectives

Job creation

Food security

Sustainable growth

Sub-objectives

Energy Efficiency

Conservation

Mitigation/adaptation

Develop capacity

Poverty reduction

Resource efficiency

Initiatives – Examples from Grenada

- 1) Training farmers in water management techniques
- 2) Green existing training programmes
- 3) Expand labour-intensive geothermal sector (UNDESA, 2012b)

Towards a Green Economy in South Africa

Catalyst to South Africa's Green Economy Focus

The 2010 Green Economy Summit

- Highlighted key issues driving green economy transition in South Africa
 - Recognition that past and current patterns of production and consumption are environmentally unsustainable
 - Natural resources are national economic assets that need to be managed in a sustainable manner
 - A substantial growth in investments is necessary to achieve climate change mitigation and adaptation goals.
 - An increased recognition that the threat of climate change requires a change in behaviour and that green technology development and industries creates business and employment opportunities.
- Presents South Africa's understanding of the green economy:
 - A system of economic activities that result in improved human well-being over the long term, while not exposing future generations to significant environmental risks or ecological scarcities

Policy actions for green transformation

National Climate Change Response White Paper (2011)
 Sustainable Development Action Plan (2011)
 New Growth Path / Green Economy Accord (2011)
 National Development Plan (2013)
 Medium Term Strategic Framework (2014-2019)

| | | | | |
|---|---|-----------------------------------|---|---|
| Bio-Economy Strategy (2013) | Agriculture and Rural Development Plan (2011) | Integrated Resource Plan (2011) | Environmental Fiscal Reform Policy Paper (2006) | National Biodiversity Strategy and Action Plan (2005) |
| National Waste Management Strategy (2011) | National Transport Master Plan (2007) | Renewable Energy Strategy (2003) | Industrial Policy Action Plan (Various) | 10-Year Innovation Plan (2007) |
| National Skills Development Strategy III (2013) | White Paper on National Transport Policy (1996) | Energy Efficiency Strategy (2005) | Green Economy Accord (2011) | National Water Resource Strategy (2013) |

Source: Adapted from Unpublished National Treasury Analysis of Environmental Expenditure (National Treasury, 2015) and UNEP Green Economy Scoping Study (UNEP, 2013)

National green economy policies and initiatives (1)

| Initiative and/or framework | Outline | Indicators/Outcomes | Commitments |
|--|--|---|--|
| <p>National Strategy for Sustainable Development 2011-2014 (NSSD1) (DEA, 2008)</p> | <p>Transition towards a green economy is identified as a one of the five strategic priorities of NSSD 1</p> <p>The objective of the priority is to facilitate a fair transition towards resource efficiency, low carbon and pro-employment growth path.</p> | <ul style="list-style-type: none"> Progress on the implementation of nine green economy programmes: impact on jobs, industry development and ecosystem benefits Financial resources for green economy investments Registered innovation is the form of intellectual property Share of GDP of the Environmental Goods and services | <ul style="list-style-type: none"> IDC ring-fenced R11,7 billion DBSA: R25 billion National Treasury R800 million Private Sector > R100 billion |
| <p>National Development Plan (NDP),2011 (National Planning Commission, 2011)</p> | <p>Chapter 5 tables a vision for South Africa to transition towards a low carbon, resilient economy and a just society</p> <p>The path to achieving the vision requires long term strategies and steps to reduce dependency on carbon, natural resource and energy while balancing objectives to increase employment and reduce inequality</p> | <ul style="list-style-type: none"> Near term actions (by 2015): development of market based instruments, partnerships for adaptation and mitigation actions, implement Carbon Tax, and investments into R&D, infrastructure Medium term actions (by 2020): Establish a culture of energy efficiency, embed resilience planning in all planning processes, carbon budgets approach an important element to policy development Long-term actions (by 2030): Earlier investments are paying off and resulting in inclusive economic growth | <p>N/A</p> |

National Green Economy Policies and Initiatives (2)

| Initiative and/or framework | Outline | Indicators/Outcomes | Commitments |
|--|--|--|---|
| <p>New Growth Path(NGP) (Accord 4: Green Economy Accord), 2011 (Economic Development Department, 2011)</p> | <p>The NGP identifies the green economy is as key sectors to drive industrial development and job creation.</p> <p>The Accord prioritised manufacturing and green industries through a localised strategy. Aggressive investments commitments are made</p> | <ul style="list-style-type: none"> • Employment targets: 300 000 additional direct jobs by 2020, of which 80 000 in manufacturing and the rest in construction, operations and maintenance, rising to well over 400 000 by 2030 • Achieved though commitments into 12 thematic area such as renewable energy-solar water heating, energy efficiency, waste recycling programmes, green buildings & bio-fuels etc. | <ul style="list-style-type: none"> • Commitments were made by various stakeholder to : set aside capital allocation, provide incentives through regulation, and build capacity and skills towards a green economy • The timelines for the commitments range from the near term (2016) and the medium term (2020). |
| <p>Industrial Policy Action Plan II (IPAP II), 2013 (DTI, 2013)</p> | <p>The IPAP prioritises growth in green and energy saving industries through the design of industry specific incentives. The IPAP aims to strike a balance between creating and growing new sectors whilst stabilising and rejuvenating existing industries.</p> | <ul style="list-style-type: none"> • Emphasis on green industries, renewable energy and energy efficiency sectors. • Highlights the need for new procurement regulations and industrial financing • Outcomes include: a low carbon roadmap for the manufacturing sector, increased local content threshold for renewable sector, & designated energy-efficiency products in support of the development of a competitive local manufacturing industry. | <p>N/A</p> |

National Green Economy Policies and Initiatives (3)

| Initiative and/or framework | Outline | Indicators/Outcomes | Commitments |
|---|---|---|-------------|
| National Climate Change Response Policy (NCCRP), 2011 (DEA, 2011) | <p>The NCCRP aims to promote investment in human and productive resources that will facilitate the growth of the green economy.</p> <p>The NCCRP states that government will have to increase the mobility of labour and capital out of carbon intensive sectors and industries and move towards greener productive sectors and industries.</p> | <ul style="list-style-type: none"> The NCCRP outlines the county's approach to mitigation and adaptation and frames priorities in terms of key near term priority flagship programmes The document calls for a reduction in greenhouse gas, ensuring community and ecosystems resilience and reducing dependency on fossil fuels. | N/A |
| Draft Carbon Tax Bill, 2015 (Minister of Finance, 2015) | The tax puts a price on carbon by obligating the polluter to internalise the external costs of emitting carbon. | <ul style="list-style-type: none"> A proposed tax design that is neutral on the electricity price and revenue neutral from a macro-economic perspective | N/A |

Source: Policy Documents and (Nhamo, et al., 2014)

International Comparisons

China, Bolivia and Thailand

Objectives

ECONOMIC

- Employment creation
- Sustainable growth
- Investment

ENVIRONMENTAL

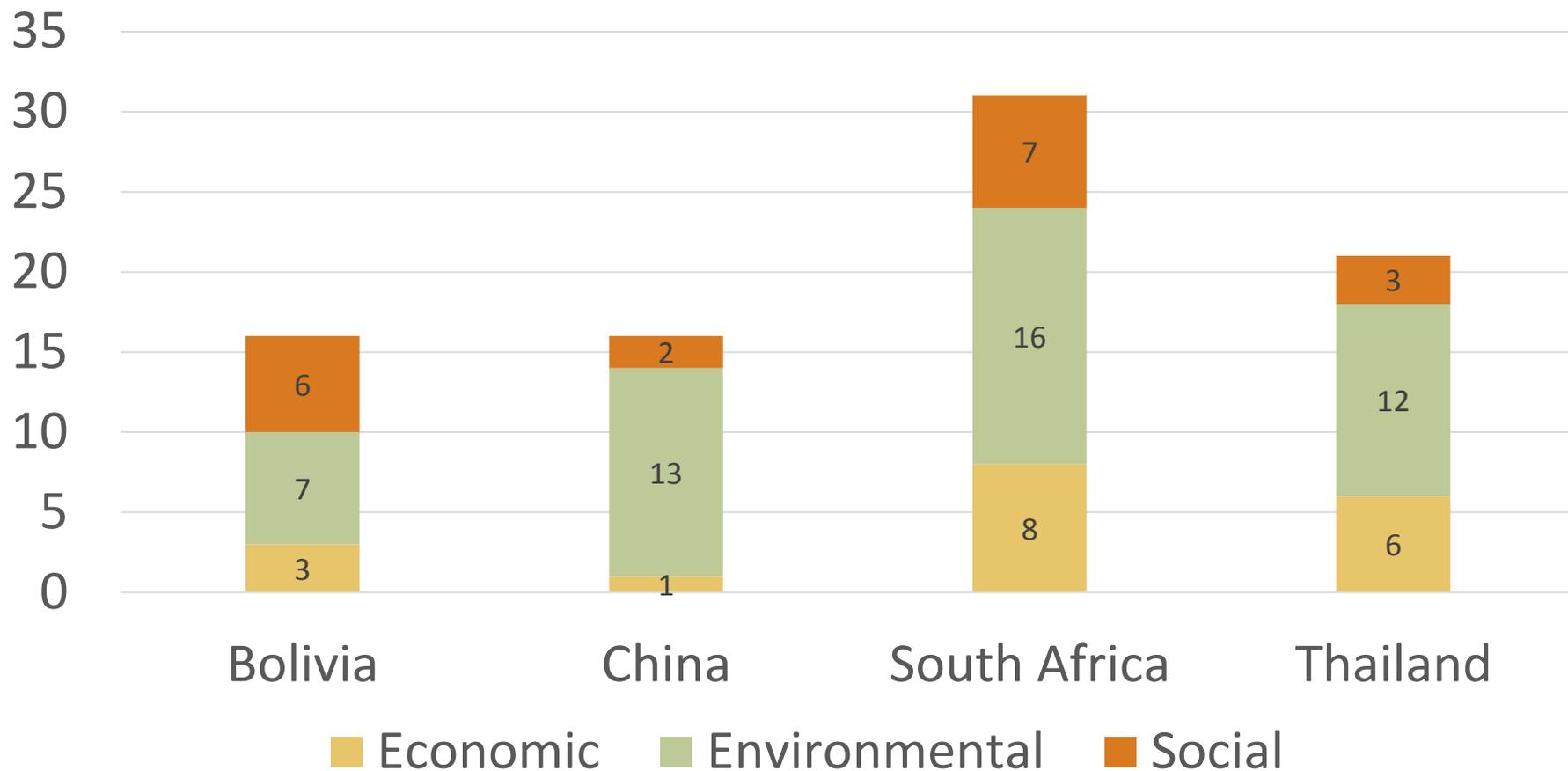
- Resource conservation and management (includes biodiversity and ecosystems)
- Water management
- Climate change - mitigation (includes clean energy)
- Climate change - adaptation
- Environmental sustainability (including Green Buildings and built environment)
- Waste management
- Energy efficiency
- Sustainable consumption
- Resource efficiency (including sustainable production)
- Sustainable transport

SOCIAL

- Equity/Inequality
- Food security
- Poverty (including social services and welfare net)
- Service delivery
- Education
- Healthcare
- Training/Skills Development
- Environmental Awareness

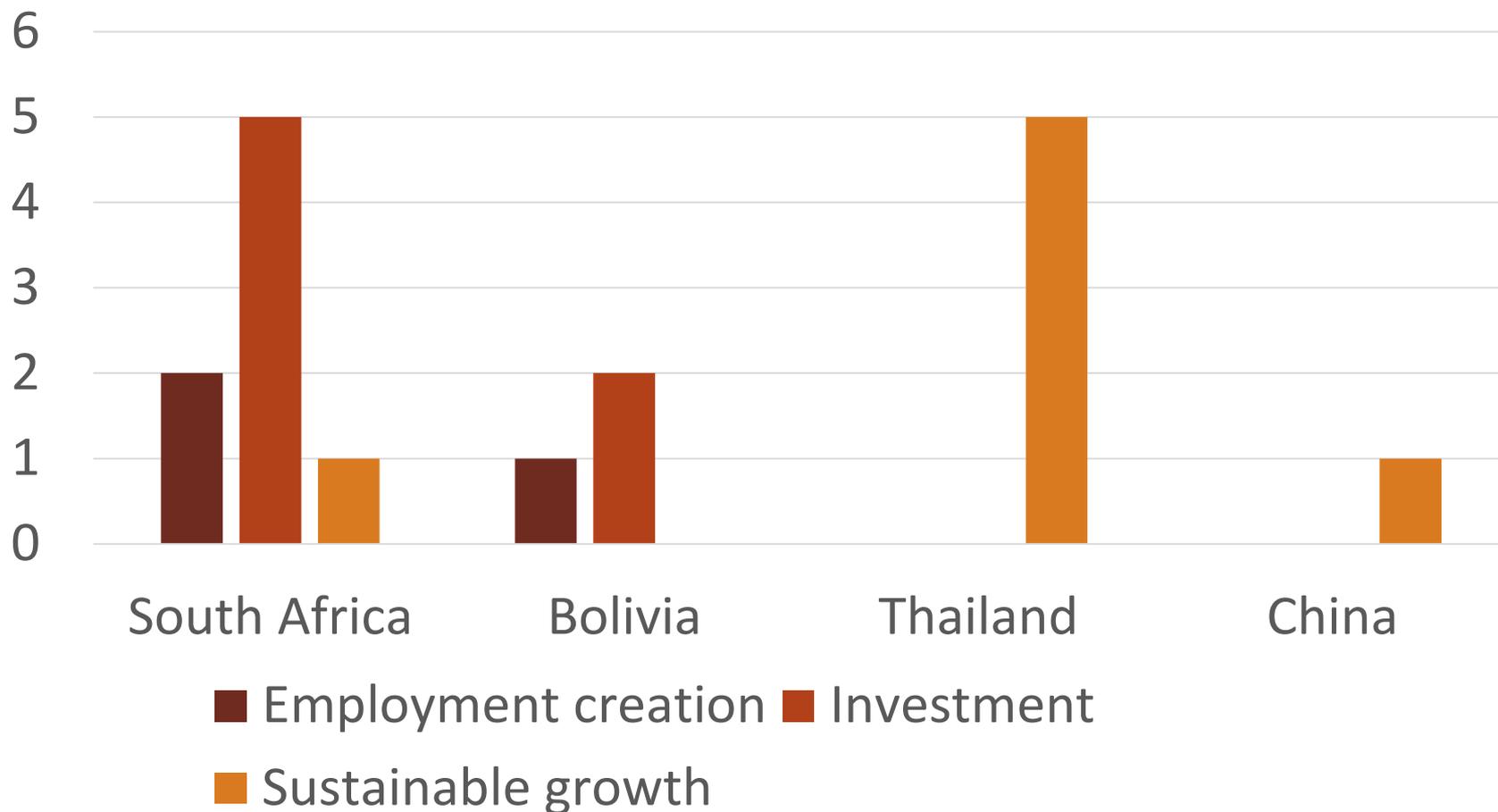
Assessment of Objectives

Count of Policy Objectives



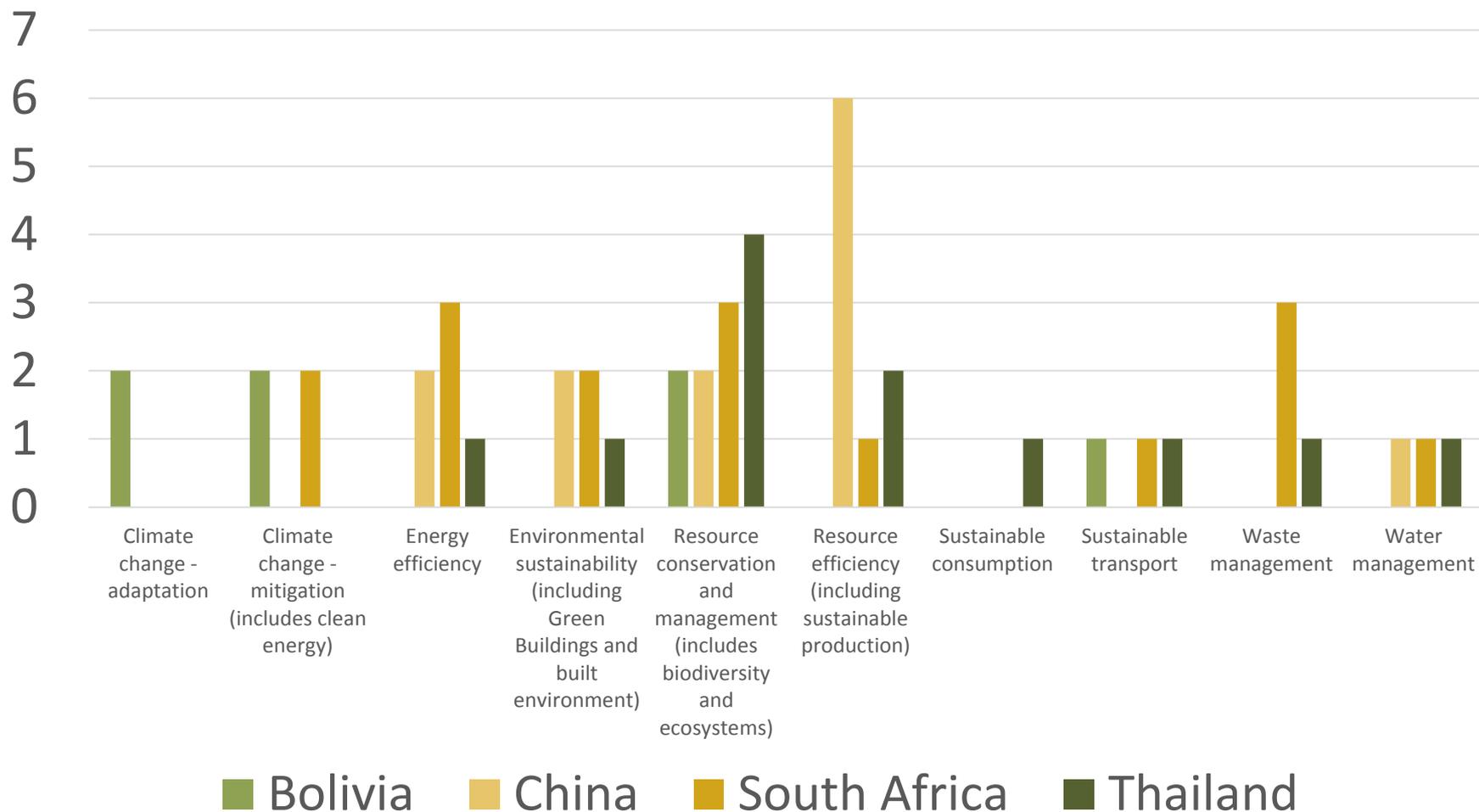
Assessment of Objectives

Economic Objectives



Assessment of Objectives

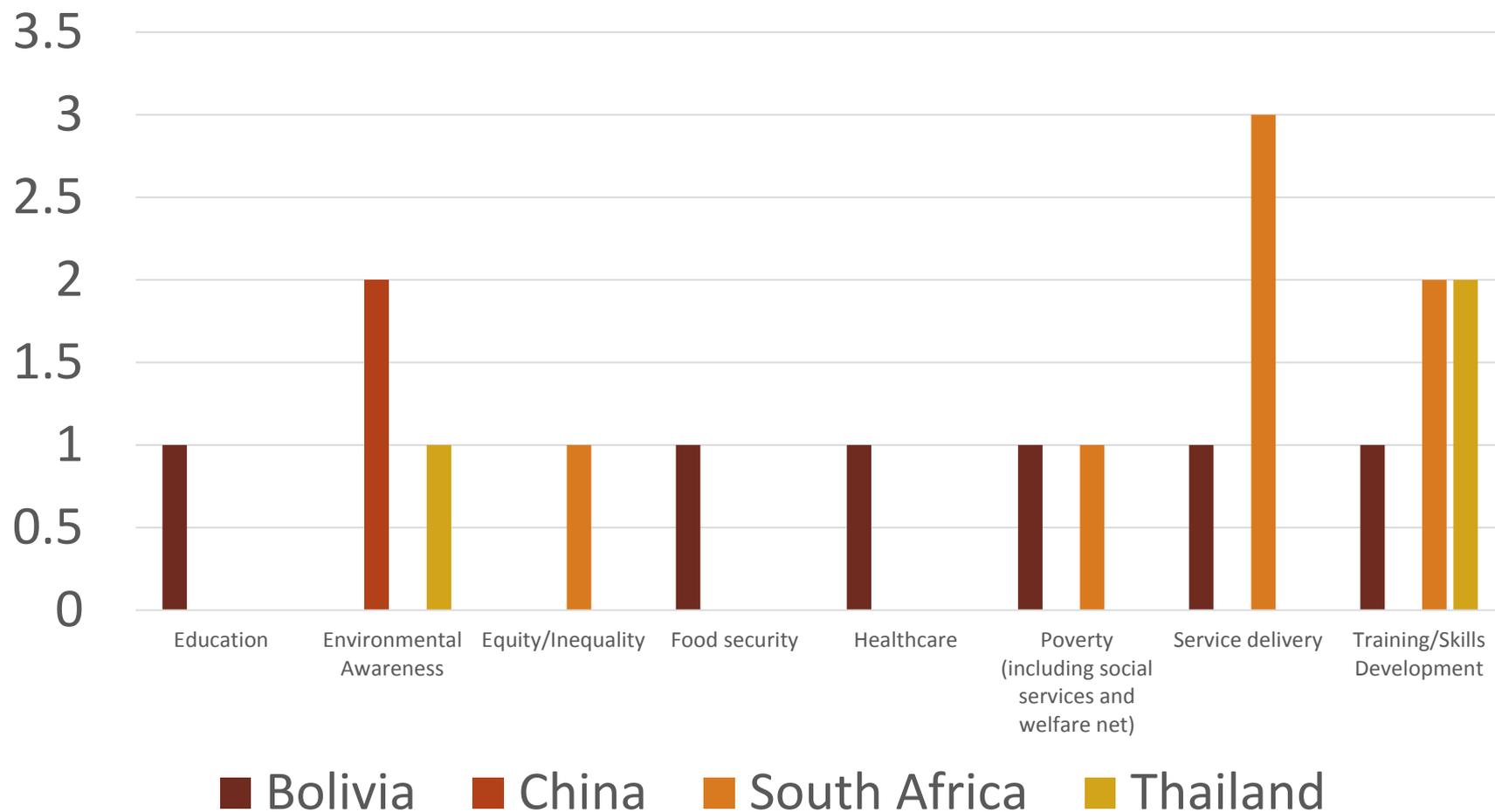
Environmental Objectives



■ Bolivia ■ China ■ South Africa ■ Thailand

Assessment of Objectives

Social Objectives



Measuring Indicators: Green Growth Knowledge Platform

SOCIO-ECONOMIC CONTEXT

- GDP Per Capita
- Population
- Population Density
- Unemployment
- Gini Index
- Human Development Index

NATURAL ASSET BASE

- Average Annual Deforestation
- Annual Freshwater withdrawals per capita
- Agricultural land
- Terrestrial and marine protected areas

ENVIRONMENTAL AND RESOURCE PRODUCTIVITY

- CO2 emissions per capita
- Carbon productivity

ENVIRONMENTAL QUALITY OF LIFE

- Population exposure to air pollution
- Access to improved sanitation
- Access to improved water source
- Access to electricity

POLICIES AND ECONOMIC OPPORTUNITIES

- Fossil fuel consumption subsidies
- Environmentally related tax revenue
- Renewable Electricity

WEALTH CHANGES

- Changes in Wealth per Capita

Links between GGKP and objectives

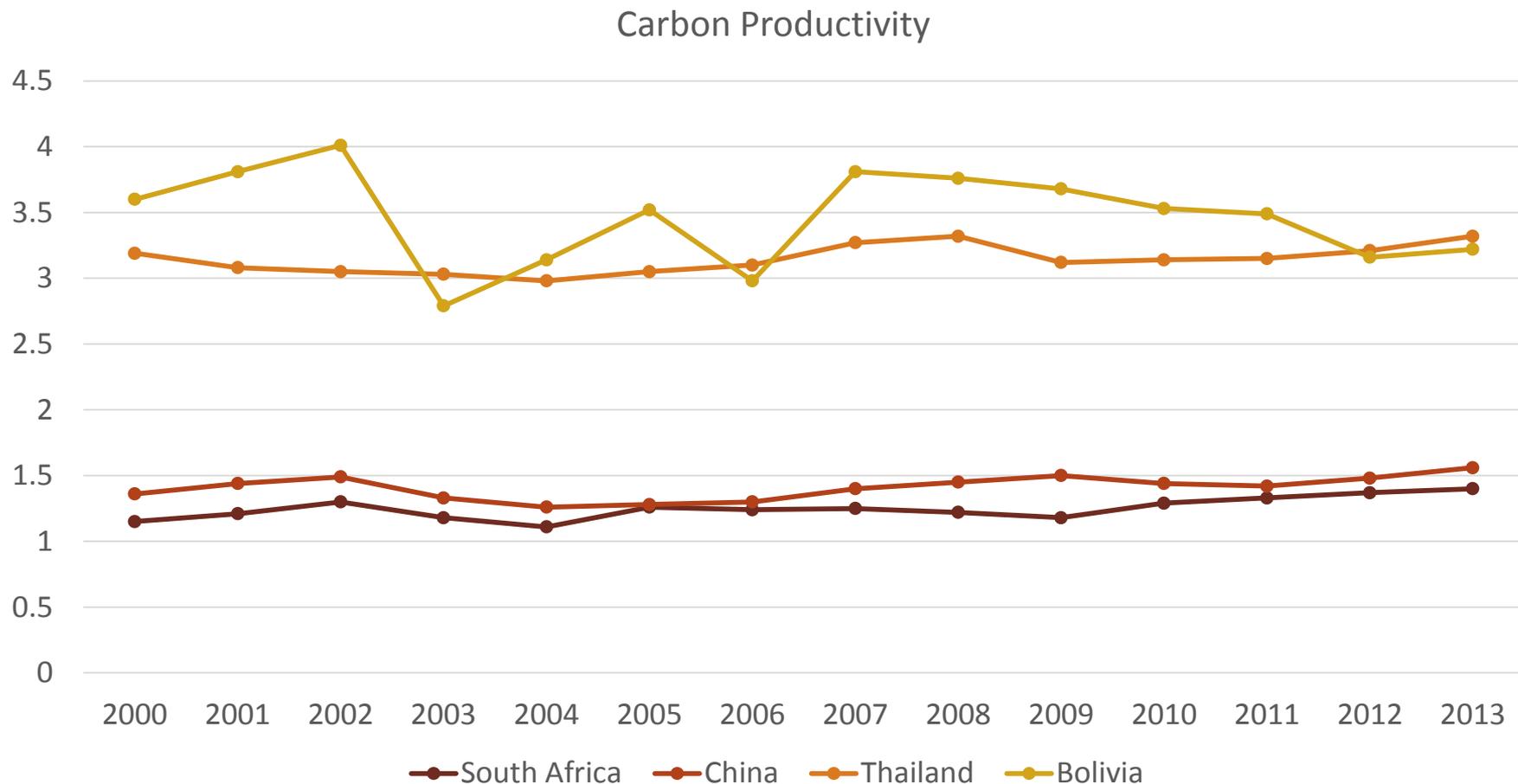
| Economic Objective | GGKP Indicator |
|---------------------|-------------------------------------|
| Employment creation | Unemployment |
| Sustainable growth | Carbon productivity |
| | Environmentally related tax revenue |
| | Changes in wealth per capita |
| | Population density |
| Investment | Fossil Fuel Consumption Subsidy |
| | Changes in wealth per capita |

| Social Objective | GGKP Indicator |
|---|--------------------------------------|
| Equity/Inequality | Gini Index |
| Food security | Agricultural land |
| Poverty (including social services and welfare net) | HDI |
| Service delivery | Access to improved sanitation |
| | Access to improved water source |
| | Access to electricity |
| Education | HDI |
| Healthcare | Population exposure to air pollution |
| | HDI |
| Training/Skills Development | HDI |
| Environmental Awareness | |

Links between GGKP and objectives

| Environmental Objectives | GGKP |
|--|--|
| Resource conservation and management | Terrestrial and marine protected areas |
| | Average annual deforestation |
| Water Management | Annual freshwater withdrawals per capita |
| | Terrestrial and marine protected areas |
| | Access to water |
| Climate Change- mitigation (includes clean energy) | CO2 emissions per capita |
| | Carbon Productivity |
| | Terrestrial and marine protected areas |
| | Average annual deforestation |
| Climate Change Adaptation | |
| Environmental sustainability (including green buildings and built environment) | |
| Waste Management | |
| Energy Efficiency | Renewable Electricity |
| Sustainable Consumption | |
| Resource efficiency (including sustainable production) | |
| Sustainable Transport | |

Measuring Indicators overtime: Carbon productivity



Conclusions

- Need to test more countries and see if objectives fit
- Many KKGPs are proxies, more defined indicators could be more useful
 - I.e. Environmental expenditure allocations
 - ‘Green Economy Projects/Investment funds’
 - % of renewable energy
 - % green jobs (where measurable)
- KKGPs are good starting point for comparisons
- Need measurable data and refinements
- Important for countries to have measurable targets

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