



**DNA Economics**  
Making economic sense of common problems

# **Mpumalanga Green Economy**

## **Draft Green Economy Sector Plan**

*26 August 2016, Middleburg*

# Presentation Outline

1. Contextualisation of the plan
2. Formulation process
3. Green sector implementation pillars
4. Implementation plan

# Policy background and aims of the plan

# Review of policy framework: Provincial

- Vision 2030 (2013)
  - Overarching strategic framework for Mpumalanga
  - Organising structure of vision focuses on outcomes and mechanisms to achieve outcomes
  - The framework is a valuable platform for structuring green economy implementation plan.
- Mpumalanga Economic Growth and Development Path (MEGDP) (2011)
  - The Green economy is identified as a new economy opportunity areas along with ICT
  - The Green Economy is identified as a sector that will assist in a job creation and reduce the emission of green house gases

# Provincial interpretation of the green economy

## Western Cape (2013)

- Western Cape Green Economy Strategy Framework has the core objective of using the green economy concept as a means to become the leading green economic hub in Africa.
- Green Economy is embedded into economic activities through Green is Smart Framework
- Environmental Affairs and Development Planning prepare annual GE reports; Green Cape is an SPV created to unlock green economy potential in the province (donor funded)

## Limpopo (2013)

- Limpopo Green Economy Plan aims for the province to become a national pioneer in the green economy through leveraging its inherent natural resource advantages.
- The Plan identifies short, medium and long term goals for the province, with a 2050 time horizon. Focus areas are structures according to national priorities.
- Limpopo Department of Economic Development, Environment and Tourism established a Green Economy Unit to compile detailed implementation action plans

## Gauteng (2010)

- Gauteng Department of Economic Development aim is to implement a systematic approach to build a low carbon, resource productive economy in Gauteng that creates jobs and reduces environmental impacts.
- Gauteng Department of Economic Development sees its role mainly as a facilitator for the development of the green economy. Document is due for revision

# Provincial interpretation of the green economy

## KwaZulu Natal (2012)

- KwaZulu-Natal Green Economy Strategy aims for the province to be a place where opportunities are provided to all citizens to allow for prosperity and where natural resources are augmented and sustainably used to support basic needs and sustainable growth
- There are 9 implementation projects identified in the strategy e.g. waste economy programs, green provincial buildings, green procurement policy, payment for eco-system services etc.
- KZN Department of Economic Development & Tourism established a Green Economy Unit which launched a Green Growth website in 2012 ( currently not active). Green Economy Technical Assistance Fund was also established in partnership with Trade and Investment KZN

## Free State (2014)

- Free State Green Economy Strategy in which it states its objective to have a full transition to a green economy by 2045.
- Five key focus areas for the development of the green economy are: agriculture; climate change; energy; water; and capacity building
- In 2013, the Free State Department of Tourism, Economic Development and Environmental Affairs launched Youth Green Economy programme

# Aims of the green sector plan

- The Plan aims to provide an integrated approach towards developing the green economy in Mpumalanga by 2030 in line with the Vision 2030. Specific objectives include:
  - Developing a sector plan based on the province's strengths in natural resources endowments
  - Expanding on the economic, green and environmental initiatives that are already underway in the province in order to facilitate quick wins
  - Support the DEDT's drive in sustainable economic development
  - Develop an action plan for implementation

# Formulation Process

# Methodology and limitations

## Phase 1: Green economy research

### Project inception

- Assignment specification
- Identification of sources
- Identification of key stakeholders and reference group

### Literature/Desktop Review

- ✓ Literature review report
- International, national review on green economy best practices
- Provincial policy priorities, socio-eco status quo & resource profile

### Stakeholder consultations

- ✓ Research report
- Semi-structures interviews conducted through meetings
- Aim: uncover current SD/ GE initiatives, opportunities, challenges & barriers

### Development & Drafting of Green Economy Strategy

- ✓ Draft GE Sector Plan
- Prioritisation of GE Opportunities
- Outline of green economy initiatives
- Detailed action plan with indicative timelines

### Final consultations at MP Green Economy Summit

### Finalisation of Green Economy Sector Plan

## Phase 2: Plan Development

### Stakeholder consultation and Participation

1. Initial consultations with key public sector stakeholders: provincial and national government, DFI's, research institutions, district municipalities
2. Consultations extended to business associations, companies

### Limitation and challenges

1. Lack of coordination across relevant stakeholders
2. Connecting with the right people
3. Access to strategic documents (documents in draft form)

# Green Sector Prioritisation: provincial priorities

Economic priorities according to MEDGP	Environmental priorities (based on researched activity)
Reduce unemployment	Biodiversity management
Reduce poverty	Waste management
Reduce inequality	Water resources
	Land rehabilitation

Source: MEDGP and DNA Economics research

# Green Sector Prioritisation: prioritisation criteria

Factors addressing socio-economic priorities	Factors addressing the environment
<b>Potential for job creation:</b> contribute towards the creation or preservation of jobs?	<b>Resource quality improvements:</b> assessment of ecological footprint e.g. CO <sub>2</sub> reductions
<b>Industry localisation potential:</b> opportunity for industrial development or additional industrial activities	<b>Resource volume improvements:</b> contribute more resources without detracting from the environment?
<b>Rural development:</b> intervention geared towards improving livelihoods in rural areas?	
<b>Addressing income inequality:</b> invention just and equitable for all?	
<b>Access to services:</b> a direct impact on the access to services for the poor?	

Source: Adapted from Development Bank of Southern Africa's prioritisation of the Green Economy programmes nationally (2011)

- Each criterion is assigned a score of 1, 2 or 3 with 3 indicating a high potential
- Scoring exercise is relatively subjective and qualitative
- Opportunities with aggregate score of 7 or higher were selected for prioritisation in the province

# Green Sector Prioritisation: criteria application

High level opportunities	Jobs	Industry localisation potential	Rural development	Income inequality	Access to services	Resource quality improvements	Resource volume improvements	Total
Generating electricity from bio-mass	3	1	2	2	1	3	3	15
Mini or Micro Hydroelectricity development	1	1	2	0	2	1	1	8
Energy efficiency & Solar PV installations	1	0	0	0	2	3	3	9
Support for sustainable small-scale and community farming	3	1	3	3	2	2	2	16
Training in Sustainable agricultural practices	3	1	1	0	0	3	3	11
Waste management: evaluate competing models for recycling	3	2	1	0	0	3	3	12
Generating electricity from landfill waste biogas	1	0	2	1	2	3	3	12
Feasibility study on developing a bio-products industry	1	1	1	0	0	3	2	8

# Green Sector Prioritisation: emerging priorities

## Implementation pillars

## Prioritised opportunities

Biomass sector

- Generating electricity from bio-mass (15)
- Feasibility study on developing a bio-products industry (8)

Farming for food security

- Support for sustainable small-scale and community farming (16)
- Training in sustainable agricultural practices (11)
- Development of agriculture industry outside of established farming based on Agri-hubs (14)

Towns and urban centres

- Waste management (12)
- Generating electricity from landfill waste (12)
- Rollout of solar PV and energy efficiency (9)
- Clean cooking stoves (12)

Sustainable Tourism

- Expansion of eco-tourism and develop PPPs with large, private landowners for tourism initiatives (8)
- Development of small, sustainable enterprise development on protected land (12)

# Green Economy Implementation Pillars

# Bio-mass sector



**Strategic focus areas**

**Forestry**

- Grow the number of biomass plants to match resource availability

**Sugar cane**

- Expand electricity sales from bagasse

**Resource management**

**Sustainable Consumption**

**Goals for 2022**

- Two projects established through Bioenergy Cluster support

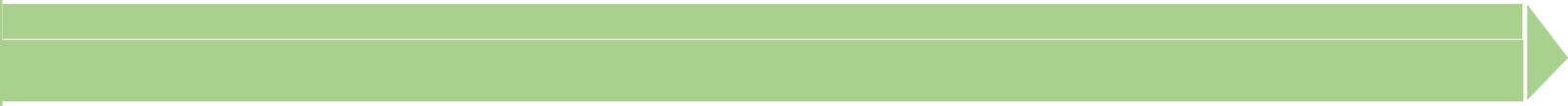
- One project established through Bio-energy Cluster support

**Suggested Activities**

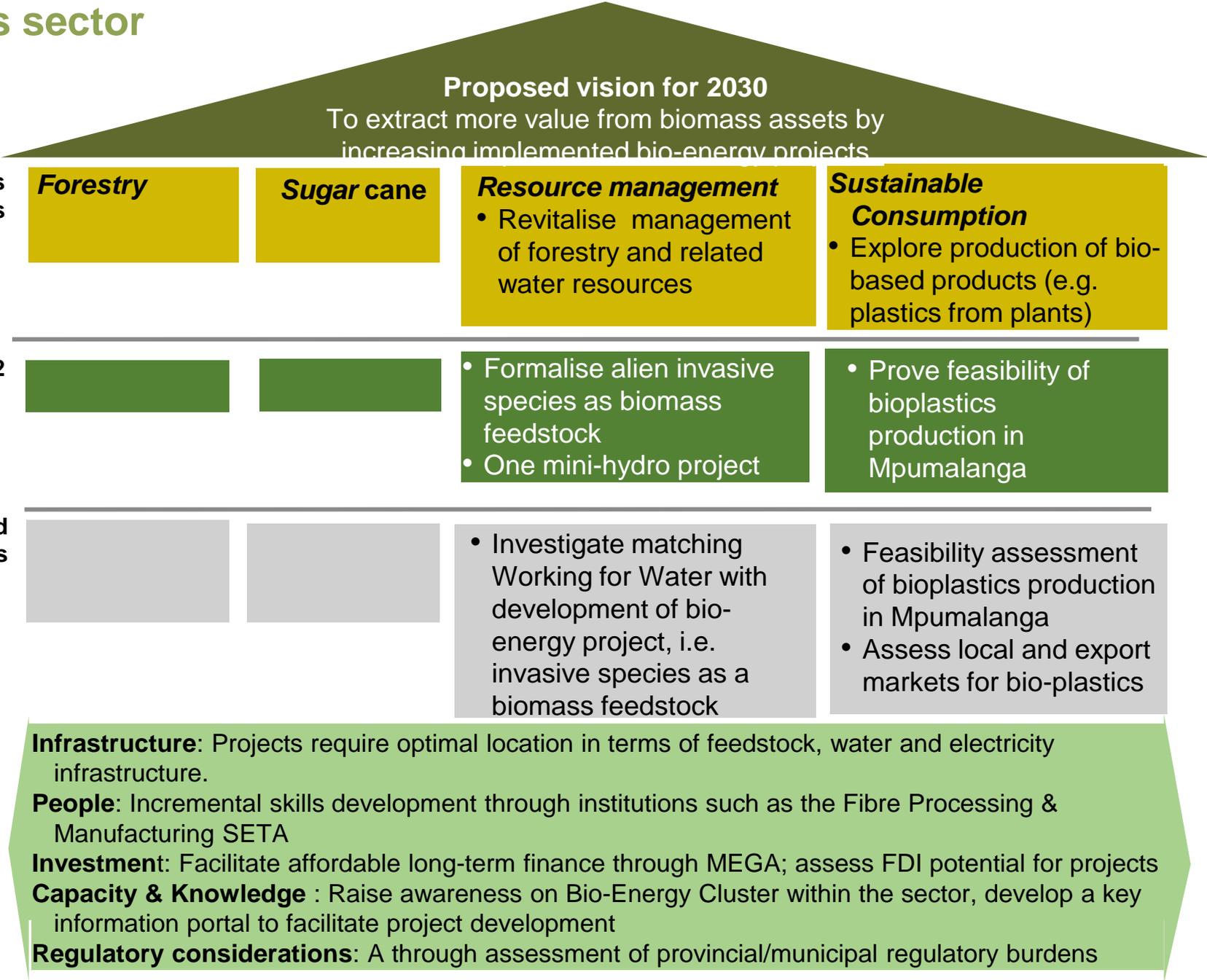
- Leveraging Bio-Energy Cluster for partnerships
- Identify and develop strategies to overcome regulatory barriers

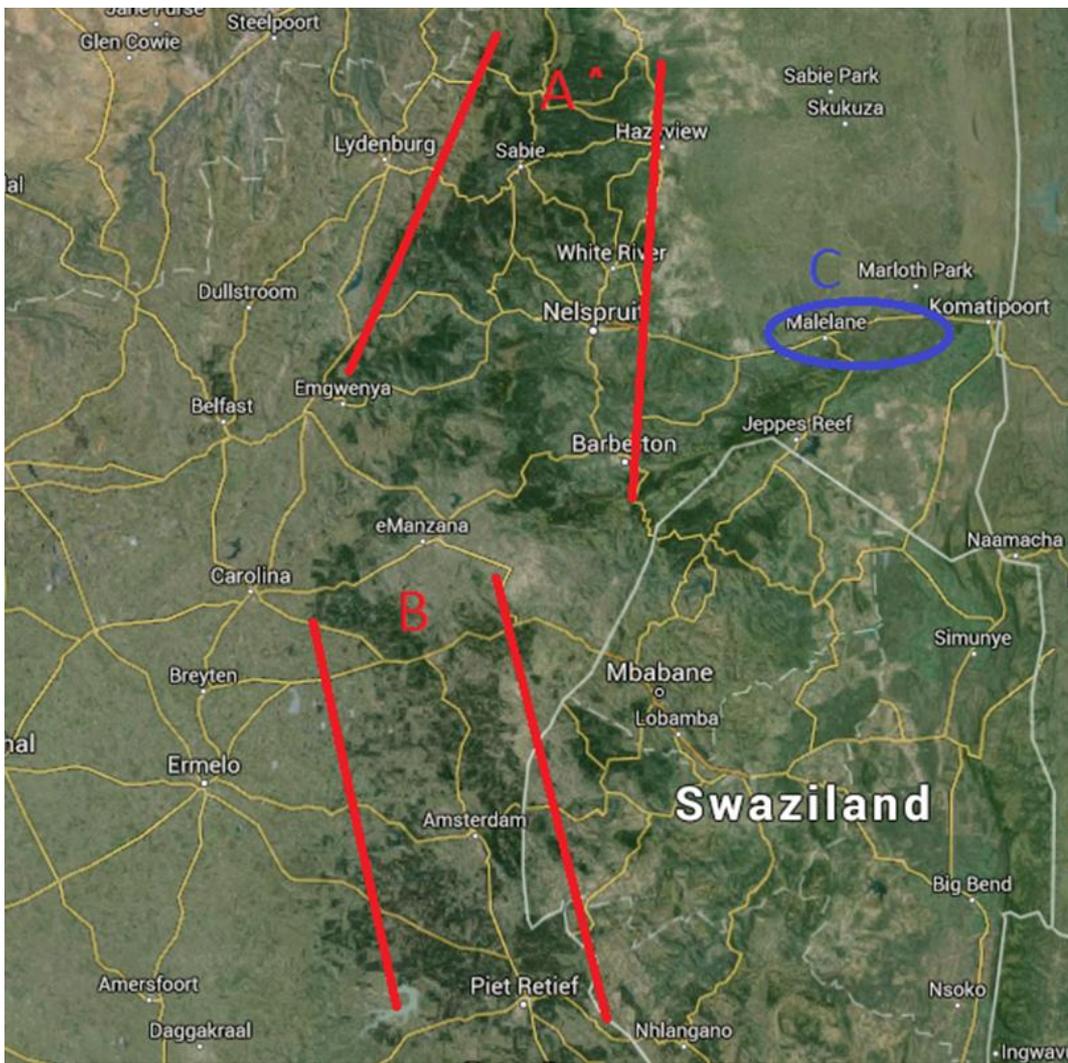
- Leveraging Bio-Energy Cluster for partnerships with sugar producers/farmers
- Identify and develop strategies to overcome regulatory barriers

**Suggested Cross-Cutting Activities**



# Bio-mass sector





# Sustainable Agriculture

## Outcome for 2030

A resource conscious, sustainable dual agricultural economy

### Strategic focus areas

#### ***Small holder farmers***

- Embed green initiatives in the rollout of aggregators (Agri-parks, & Agri-hubs)

#### ***Commercial farmers***

#### ***Resource management***

### Goals for 2022

- Include alternative forms of energy in Agri-hubs

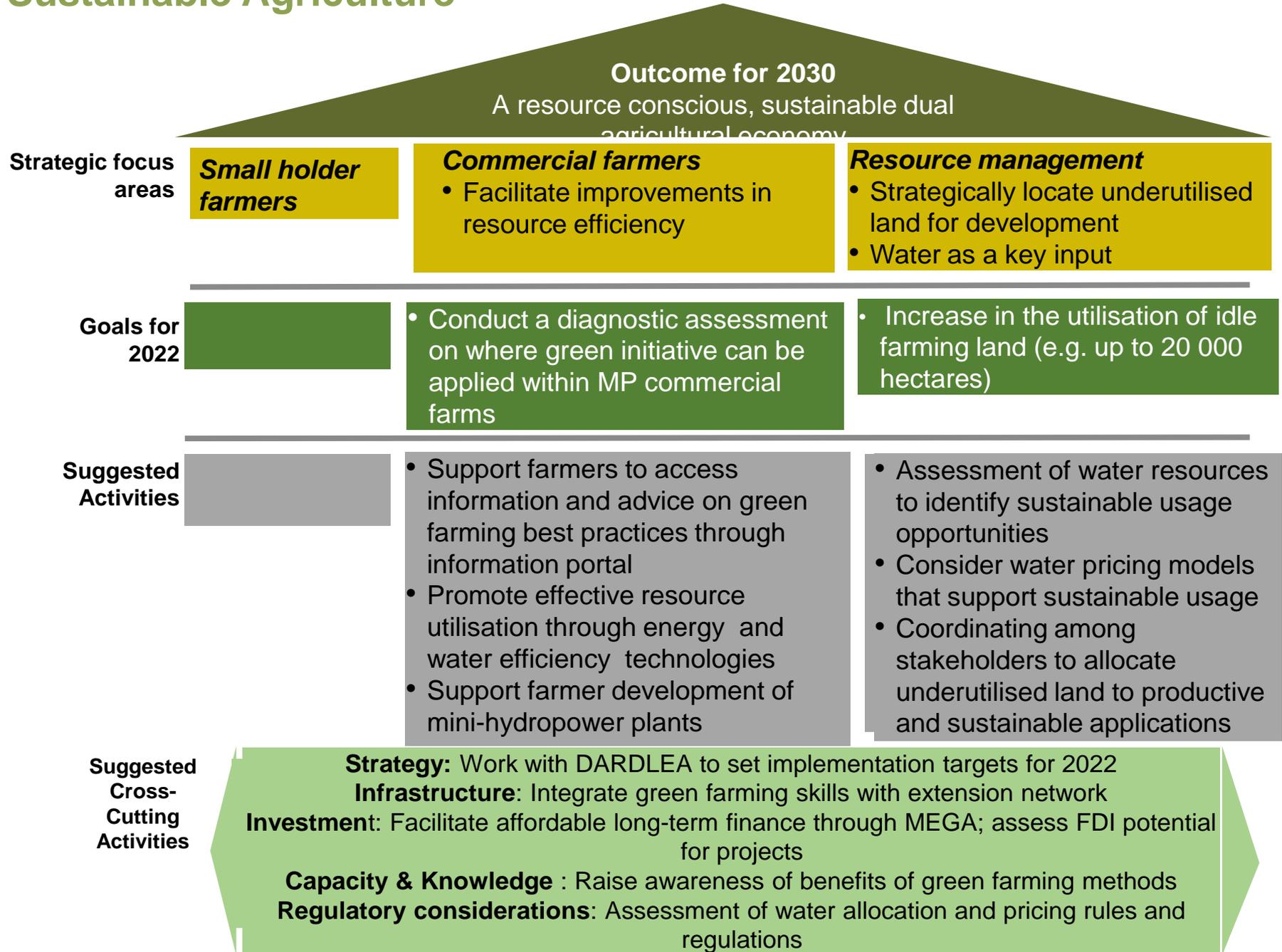
### Suggested Activities

- Support farmers to access information and advice on green farming best practices via extension services
- Pilot the inclusion of green initiatives in a farming co-operative e.g. solar lighting etc.
- Addition of alternative forms energy, energy efficiency and recycling in Agri-hubs

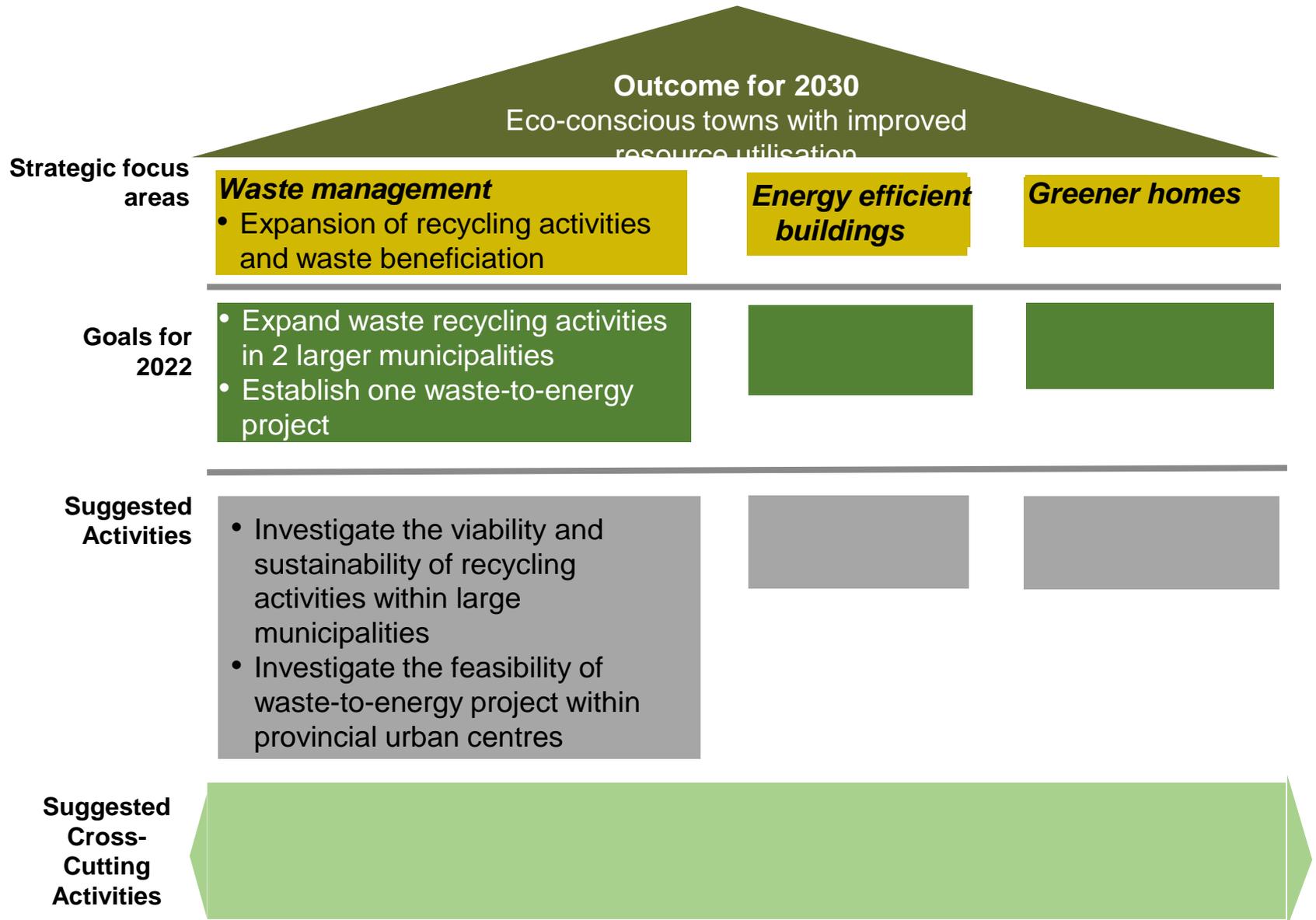
### Suggested Cross-Cutting Activities



# Sustainable Agriculture



# Green Town and Urban Centres



**Outcome for 2030**

Eco-conscious towns with improved resource utilisation

**Strategic focus areas**

**Waste management**

- Expansion of recycling activities and waste beneficiation

**Energy efficient buildings**

**Greener homes**

**Goals for 2022**

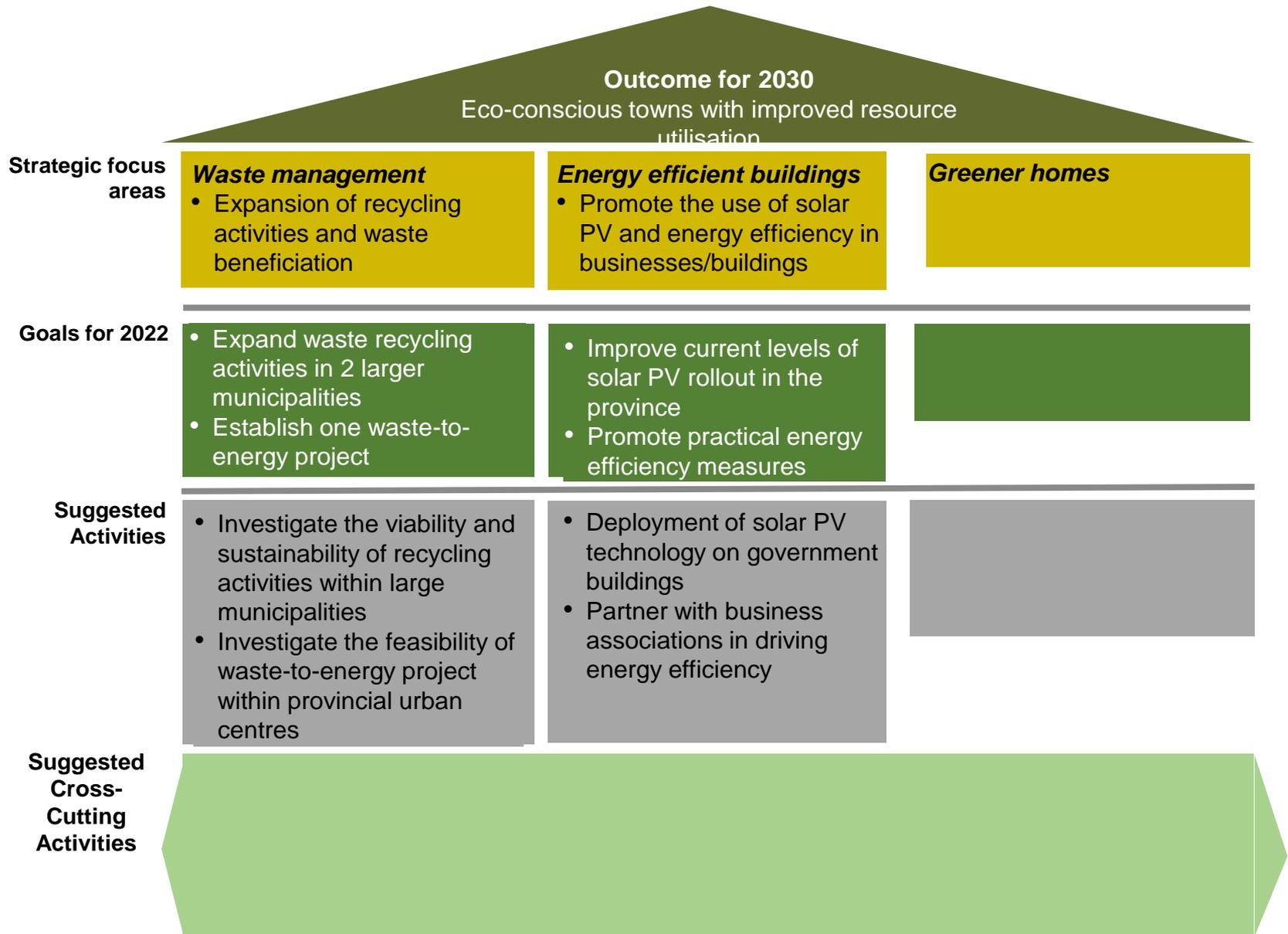
- Expand waste recycling activities in 2 larger municipalities
- Establish one waste-to-energy project

**Suggested Activities**

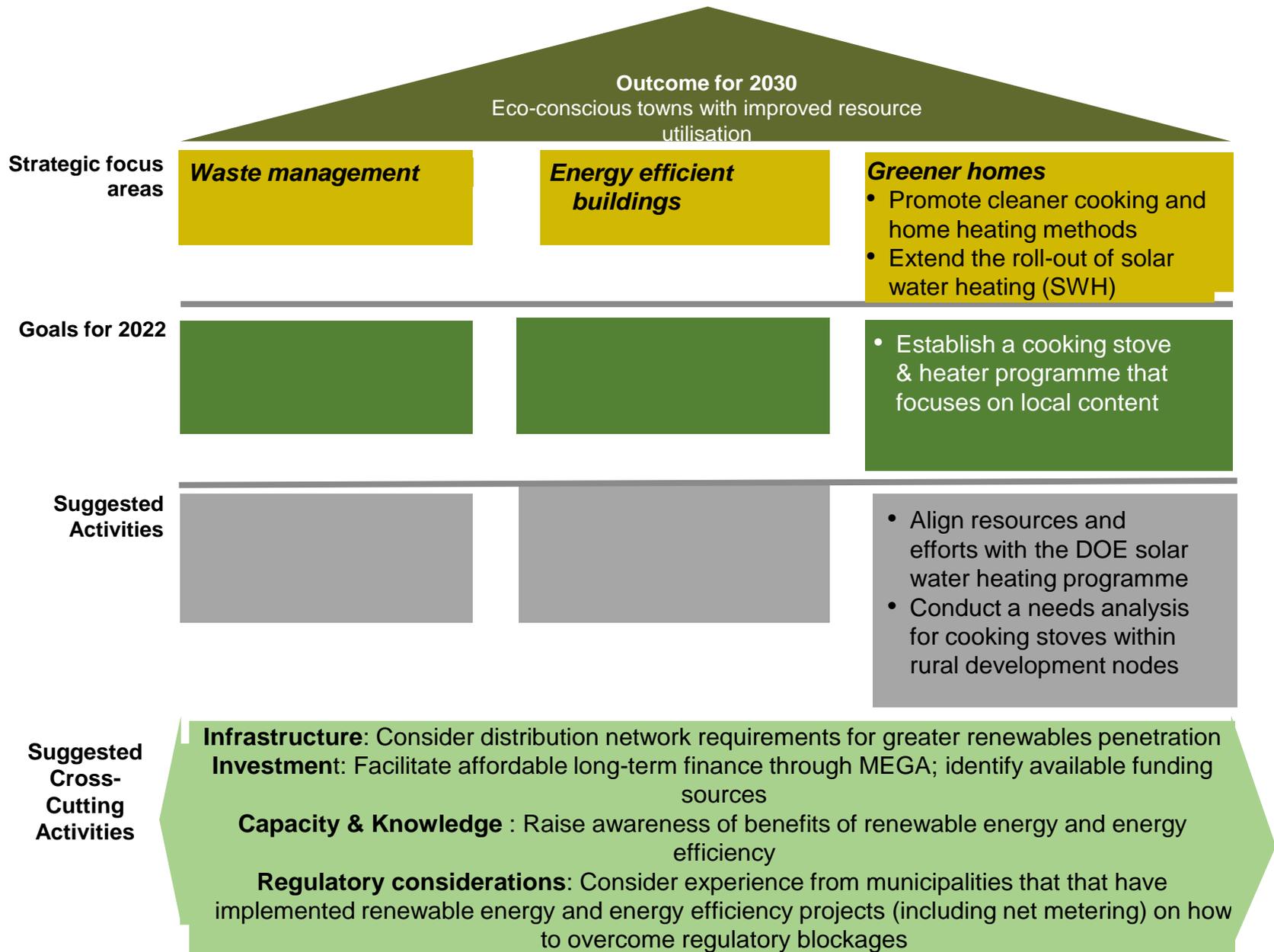
- Investigate the viability and sustainability of recycling activities within large municipalities
- Investigate the feasibility of waste-to-energy project within provincial urban centres

**Suggested Cross-Cutting Activities**

# Green Town and Urban Centres



# Green Town and Urban Centres



# Sustainable Tourism

- **Key outcome** is to leverage Mpumalanga's natural environment to deliver economic vitality that has low impact on the environment and enables healthy communities
- Suggested activities for 2022:
  - Updating the Mpumalanga Tourism Growth Strategy (2007) to incorporate sustainability into the provincial strategy
  - Promote the incorporation of responsible tourism in the grading and marketing of tourism destinations
  - Expansion of cultural parks and related activities in proximity to major tourist destinations

## *Way forward*

- Information and feedback generated at Green Economy Conference will be incorporated into the Plan
  - But we're particularly interested in comments and suggestions relating to the Green Economy Sector Development Plan
- Update Plan based on comments
- Updated plan submitted to DEDT
- DEDT will drive implementation

# High-level cross cutting activities

# Institutional and Capacity Development

## 1. Suggested capacity building activities

- a) Sensitization to the green economy concept
- b) Communicating the benefits of the green economy
- c) Partnering with national initiatives for capacity development (PAGE, CSIR, South African Low Emissions Development Program (SA-LED))

## 2. Collaboration for skills development

- a) Private sector collaboration to map skills shortage in the green economy
- b) Partner with the relevant training SETAs
- c) Strengthen technical and vocation skills development through learner-ships

# Implementation Plan

# Biomass sector

Action Item	Suggested Actions and/or Resolution	Actors	Resources	Timeframe
Leveraging Bio-energy Cluster Partnership for Bio-energy projects	- Insert senior departmental representatives into cluster	DEDT, Bio-energy cluster	None	FY 2016/17
	- Consolidate bio-mass project pipeline via information portal - establish priority projects			
	- Raise awareness of the Cluster (marketing) & extend its reach to include key project developers	DEDT	R 15 000	FY 2016/17
	- Develop a key information portal to facilitate information sharing	DEDT, Bio-energy cluster	R 35 000 (web design) R2000 (hosting p.a)	FY 2017/18
Address sector regulatory barriers	- Diagnostic evaluation to identify regulatory and other barriers to biomass projects in Mpumalanga	DEDT, Cluster, Service provider	R800 000	FY 2017/18
	- Establish a technical and inter-departmental task team to fast track 3 priority projects	DEDT, IDC, MEGA, DWA, Municipalities, DARDLEA,	None	FY 2017/18

## Biomass sector (2)

Action Item	Suggested Actions and/or Resolution	Actors	Resources	Timeframe
Bio-mass resource scoping	- Conduct a high-level bio-mass feedstock resource map through the corridor to inform sector potential and optimise location	DEDT, Forestry South Africa, University of Mpumalanga, Cluster	R 2 000 000	FY 2018/19
Leveraging on the EPWP	- Identify forestry areas with high density of invasive species within the forestry corridors	(DARDLEA), Municipalities	None	FY 2017/18
	- Assessment of weeds as a biomass feedstock within the biomass corridor	University of Mpumalanga, SAFCOL, Forestry South Africa	R 600 000	FY 2018/19
Prove feasibility of bioplastics production in Mpumalanga	- Feasibility assessment of bioplastics production in Mpumalanga	DEDT, Paper milling industry, SAFCOL	R1 000 000	FY 2019/20
	- Assess local and export markets for bioplastics		R500 000	FY 2019/20
Explore feasibility of micro- hydro-plants in public forestry lands	- Assessment of hydro-plant potential in strategic locations e.g. proximity to local communities through engagements	SAFCOL, MTPA, DEDT, Service provider	R800 000	FY 2018/19

# Sustainable farming

Action Item	Suggested Actions and/or Resolution	Actors	Resources	Timeframe
Pilot the embedding of green initiatives in a farming co-operative	- Identify a successful small holder farming co-operative and conduct a needs analysis on alternative energy sources and resource efficiency	DEDT, DARDLEA, service provider	R 350 000	FY 2017/18
	- Access government, donor or DFI grant funding to create best-practice case study. Rollout appropriate solution and evaluate the impact of these interventions on the productivity and level of co-op	DEDT, DARDLEA, MEGA, IDC, service provider	R 30 000 (support to access funding)	FY 2018/19
Alternative energy and E.E for Agri-parks & Agri-hubs	- Feasibility assessment of including solar PV, biogas digesters, energy efficiency equipment, etc. in processing centres	DEDT, DARDLEA, MEGA, Service provider	R 500 000	Depended of Agri-hub rollout schedule
Support farmers to access information and advice on best practices	- Scoping of national initiatives on sustainable agricultural practices - Develop an information tools and platforms on sustainable agriculture best practices	UMP, Western Cape Department of Agriculture, DAFF, DARDLEA	R300 000	FY 2017/18- FY 2018/19
Promote effective resource utilisation	- Raise awareness on energy efficiency, water efficiency technologies & precision agricultural techniques- sensor technologies that maximises the efficiency of inputs	UMP, Farmer Associations e.g. Agri-SA	R 100 000 (per annum)	FY 2017/18- FY 2019/20

## Sustainable farming (2)

Action Item	Suggested Actions and/or Resolution	Actors	Resources	Timeframe
Skills development	- Create programme to train extension officers in small holder farmer water management techniques & include green initiatives in current training programmes	UMP, DARDLEA, service provider	R 1 500 000	FY 2018/19
Increase utilisation of idle farming land	- Identify and quantify idle farming capacity.	DARDLEA, Municipalities	None	FY 2017/18
	- Investigate funding available to repurpose suitable idle land for sustainable agriculture e.g. organic farming (private, public, donor and DFI), and structures required to access the finance	DARDLEA, Department of Rural Development and Land Reform, Municipalities, MEGA, Service provider	R 300 000	FY 2017/18

# Green Towns- Waste management

Action Item	Suggested Actions and/or Resolution	Actors	Resources	Timeframe
Viability of expanding waste recycling activities within larger municipalities	- Map waste resources in larger local municipalities such as Mbombela- accurate data informs waste economy potential	DARDLEA, District & Local Municipalities, service provider	R1 200 000	FY 2017/18
	- Consider potential to separate waste at source	Municipalities and refuse removal service providers	R800 000	FY 2018/19
	- Assessment of the market for recycled material (e.g. packaging, plastics) and financial viability of recovering materials	DARDLEA, District & Local Municipalities, REDISA, Mondi, Service Provider	R800 000	FY 2018/19
	- Assess feasibility of treatment of waste using alternative technologies	DEDT, Service Provider	R500 000	FY 2017/18- FY 2018/19
Feasibility assessment of waste-to-energy project	- Draw lessons from Umjindi Local Municipality's participation in SALGA and GIZ pilot study on bio-gas development	GIZ Biogas Platform, SALGA, Umjindi Municipality, DARDLEA	None	FY 2017/18
	- Conduct feasibility study for a waste to energy project in larger municipalities- both landfill and waste water treatment plants	Municipality, service provider	R800 000	FY 2018/19

# Green Towns- Energy Efficient Buildings

Action Item	Suggested Actions and/or Resolution	Actors	Resources	Timeframe
Deployment of Solar PV in municipalities	- Assessment on potential impacts on revenue of the installation of solar PV- on Mbombela local municipality	SALGA, COGTA, DEDT, Interested municipalities, service provider	R1 200 000	FY 2017/18
	- Evaluation of small embedded generation regulations and tariff structures for grid connections – and experience on municipalities that have effectively supported embedded generation (City of Cape Town, Drakenstein Municipality, Ethekeweni)	SALGA, COGTA, DEDT, Interested municipalities, NERSA, Eskom, Service provider	R500 000	FY 2017/18
Deployment of Solar PV on government buildings	- Incorporate deployment of solar PV as part of current energy efficiency drive in government buildings	DEDT, Department of Public Works, Roads and Transport, Municipalities, Service provider	R10 000 000	FY 2017/18

## Green Towns- Energy Efficient Buildings (2)

Action Item	Suggested Actions and/or Resolution	Actors	Resources	Timeframe
Promotion of energy efficiency in municipalities	- Partner with business associations in marketing & driving energy efficiency for small businesses	Provincial business associations, DEDT	None	FY 2017/18
	- Compile a database of approved provincial suppliers for energy efficiency (energy audits, equipment etc.)			
	- Consolidate information on available national incentives for energy efficiency and solar PV	DEDT, Service provider	R200 000	FY 2017/18
	- Expand participation in the Division of Revenue Act (DoRA) Energy Efficiency Demand Side Management (EEDSM) Programme	National Treasury, Municipalities	None	FY 2017/18
	- At least 15 municipal buildings retrofitted for enhanced energy efficiency by 2022. Engage with DoE/DEA Vertical Nama project for additional funding.	Municipalities, DoE, service provider	R 4 500 000	FY2017/18- FY2021/2022
	- Promotion of other demand side management tools such as smart meters e.g. Mkhondo Municipality	SALGA, Municipalities, COGTA	None	FY 2017/18
	- Linking with Cities Network and lessons learnt on energy efficiency and renewable energy	Urban Centres such as Mbombela, Emalaheni	None	FY 2017/18

## Green Towns- Greener homes

Action Item	Suggested Actions and/or Resolution	Actors	Resources	Timeframe
Align efforts with the DOE SWH	- Re-establish participation in the redesigned fully subsidised SWH Programme (Social programme)	Human Settlements, Municipalities, DoE	None	FY 2017/18
Establish a cooking stove programme	- Conduct a needs analysis for cooking stoves within rural priority nodes, and high pollution areas such as the Highveld	DARDLEA, DEDT, Municipalities	R 1 500 000	FY2017/18-FY 2018/19
	- Develop guidelines and procedures in the deployment of cooking stoves. Draw on available research.	DARDLEA, DEDT, Municipalities, DTI (local content). Service provider	R 350 000	FY2017/18-FY 2018/19
	- Develop a database of approved provincial suppliers for cooking stoves. Verification with SANS and SABS	DEDT	None	FY 2019/20

# Sustainable Tourism

Action Item	Suggested Actions and/or Resolution	Actors	Resources	Timeframe
Updating the Mpumalanga Tourism Growth Strategy (2007)	- Incorporate sustainability into growth strategy	MTPA, DEDT, Service provider	R900 000	FY 2017/18
Promote the incorporation of responsible tourism in the grading and marketing of tourism destinations.	- Encourage tourism businesses to promote their sustainability credentials. through marketing support	MTPA, Business Associations	R50 000	FY 2018/19



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# Backup slides

High level opportunities	Jobs	Industry localisation potential	Rural development	Income inequality	Access to services	Resource quality improvements	Resource volume improvements	Total
Generating electricity from biomass		1			1			15
Mini or Micro Hydroelectricity development	1	1				1	1	8
Energy efficiency & Solar PV installations	1							9
Development of agriculture industry outside of established farming based on Agri-hubs		1			1			14
Support for sustainable small-scale and community farming		1						16
Training in Sustainable agricultural practices		1	1					11
Waste management: evaluate competing models for recycling			1					12
Generating electricity from landfill waste biogas	1			1				12
Feasibility study on developing a bio-products industry	1	1	1					8

# Backup slides

High level opportunities	Jobs	Industry localisation potential	Rural development	Income inequality	Access to services	Resource quality improvements	Resource volume improvements	Total
Water management: Minimise water losses								6
Water management: Re-use and recovery and infrastructure maintenance								8
Increase the scope of rainwater harvesting								13
Expansion of eco-tourism and develop PPPs with large, private landowners for tourism initiatives								8
Small, sustainable enterprise development on protected land								12
Clean cooking stoves: develop guidelines, procedures, and investigate feasibility of local manufacturing								12
Improve home insulation								5
Air pollution management-implementation of regulations								6
Expand greening of government buildings and public spaces								5