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TOWARDS A JUST TRANSITION

Climate Talks: Multistakeholder Community Dialogue
Gert Sibande Local Municipality

Adelaide Tambo Community Hall, Ext 7

29 January 2024

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MPUMALANGA SHORT TERM EMPLOYMENT OPPORTUNITIES

Purpose of the Study

To identify private sector-led, employment-creation opportunities in Mpumalanga that could be realised by 2030.

The purpose is to assist Mpumalanga province in dealing with high levels of unemployment, as well as further job losses that may be caused during an energy transition from coal.

Conceptually there are two ways to find new job opportunities

1: Grow the existing economy

Starting point

Data analysis and desktop research to understand the economics of the province **and pools of potential**

And then

Interviews with experts and stakeholders in pools of potential to identify undocumented risks and boosters, and then build out the opportunities in more detail

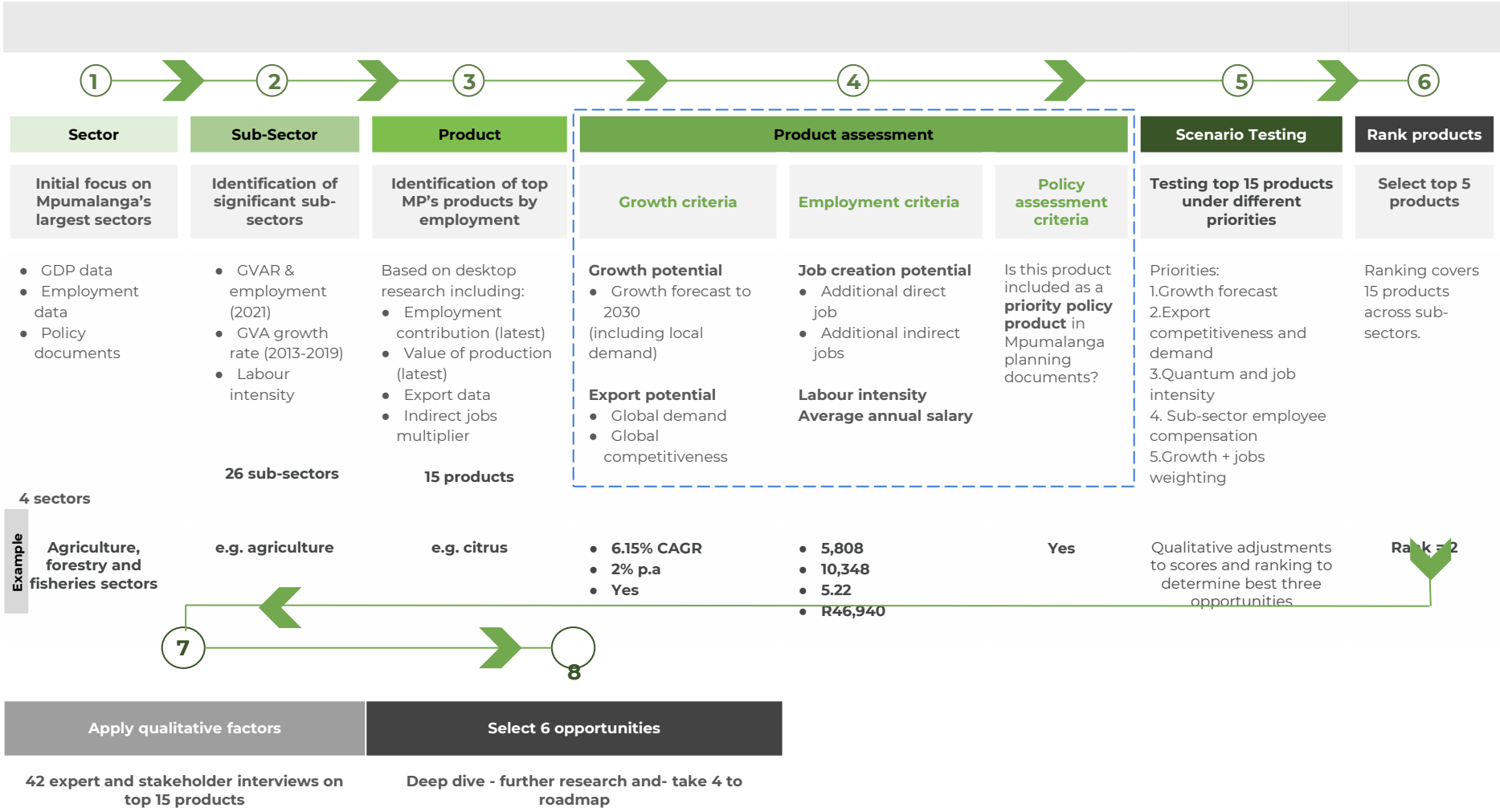
2: Grow new parts of the economy

Starting point

Interviews with experts and stakeholders to identify opportunities

And then

Limited desktop research and data analysis to validate and score opportunities


1
2
3
4
5
6
Sector
Sub-Sector
Product
Product assessment
Scenario Testing
Rank products
Initial focus on Mpumalanga's largest sectors
Identification of significant sub-sectors
Identification of top MP's products by employment
Growth criteria
Employment criteria
Policy assessment criteria
Testing top 15 products under different priorities
Select top 5 products
GDP data
Employment data
Policy documents
GVAR & employment (2021)
GVA growth rate (2013-2019)
Labour intensity
Based on desktop research including:
Employment contribution (latest)
Value of production (latest)
Export data
Indirect jobs multiplier
Growth potential
Growth forecast to 2030 (including local demand)
Export potential
Global demand
Global competitiveness
Job creation potential
Additional direct job
Additional indirect jobs
Labour intensity
Average annual salary
Is this product included as a priority policy product in Mpumalanga planning documents?
Priorities:
1.Growth forecast
2.Export competitiveness and demand
3.Quantum and job intensity
4. Sub-sector employee compensation
5.Growth + jobs weighting
Ranking covers 15 products across sub-sectors.
4 sectors
26 sub-sectors
15 products
Example
Agriculture, forestry and fisheries sectors
e.g. agriculture
e.g. citrus
6.15% CAGR
2% p.a
Yes
5,808
10,348
5.22
R46,940
Yes
Qualitative adjustments to scores and ranking to determine best three opportunities
7
8
Apply qualitative factors
Select 6 opportunities
42 expert and stakeholder interviews on top 15 products
Deep dive - further research and- take 4 to roadmap

Planned scope v scope covered to date

	Stage 1: Data analysis	Stage 2: Data analysis	Stage 3: Consultation	Stage 4: Selection	Stage 5: Deeper dive and roadmaps
Planned scope and approach	**10** subsectors ("at the level of citrus") + **1** emergent opportunity	**6** subsectors ("at the level of citrus") + **1** emergent opportunity	Survey or interview **20** companies	**Select 6 for** deep dive assessment	**4** roadmaps
Actual scope and approach	**26** subsectors ("at the level of citrus") + **12** emergent opportunities	**15** subsectors ("at the level of citrus") + **10** emergent opportunities	**42** interviews conducted	**3** established + **4** emergent opportunities **Select 6 for** deep dive assessment	**4** roadmaps

Summary of results for **established industries**

Data driven view

Long list of most important employment products in Mpumalanga

1. Wood
2. Macadamia nuts
3. Citrus
4. Bananas
5. Soya beans
6. Food manufacturing (animal feed etc..)
7. Food manufacturing (grain, starches etc.)
8. Food manufacturing (meat, fruit, veg etc.)
9. Poultry (meat & eggs)
10. Chrome Ore
11. Maize
12. Platinum
13. Manganese
14. Gold
15. Accommodation & catering

Data driven view

Shortlisted products (top five products based on employment potential, labour intensity and growth prospects)

1. Wood
2. Macadamia nuts
3. Citrus
4. Accommodation & catering
5. Bananas

Data driven view *plus qualitative view*

Combining the data riven results with qualitative risks and advantages captured from expert views not in the data

1. **Wood value chain**
   Supporting expansion of the supply of wood fibre to serve key markets (e.g. pulp, chemical cellulose and derivatives, particle board and poles)
2. **Citrus value chain**
   Supporting citrus farmers with climate adaptation measures (e.g. shade netting) and supporting the fruit processing market to benefit emerging growers.
3. **Tourism**
   Identifying catalytic interventions to improve growth in demand by overcoming barriers to growth e.g. transport efficiency, safety and product offering.

Summary of ideas for **emergent industries**

Data driven view

Long list of potential emergent opportunities in Mpumalanga

1. Stimulating large-scale industrial hemp production and processing
2. Building an ecosystem for Sustainable Aviation Fuel production
3. Supporting the delivery of Global Business Services
4. Shade netting and agri-voltaics for high value farming
5. Pre-processing and pyrolysis plant for truck tyres
6. Localising renewable energy component manufacturing/ assembly
7. Waste ash beneficiation for construction
8. Municipal water leak detection and repair
9. Treating mine affected water to improve supply
10. Installation and maintenance of heat pumps
11. Localising the zinc value chain
12. Early Childhood Development

Data driven view

Shortlisted opportunities (top five opportunities based on feasibility, employment potential, labour intensity and growth prospects)

1. Stimulating large-scale industrial hemp production and processing
2. Building an ecosystem for Sustainable Aviation Fuel production
3. Supporting the delivery of Global Business Services
4. Shade netting and agrivoltaics for high value farming
5. Pre-processing and pyrolysis plant for truck tyres

Data driven view *plus qualitative view*

Combining the data riven results with qualitative risks and advantages captured from expert views not in the data

1. **Stimulating large-scale industrial hemp production and processing**
2. **Building an ecosystem for Sustainable Aviation Fuel production**
3. **Supporting the delivery of Global Business Services**
4. **IRM (water leak detection)**

Summary: The wood value chain

Established industry

Commercially grown wood/timber could be expanded in Mpumalanga to serve identified markets. Forestry has a high labour intensity, at **7.44 jobs per ZAR 1 million of economic output.** There is steady local demand for wood for particle board and poles, and strong demand for chemical wood pulp and cellulose. Policy choices on using wood in building construction could stimulate additional local demand and support the sawmilling industry.

	Success factors	Hurdles
1	Wood supply in South Africa lags behind demand.	Land availability limitations, with some potential under land claims.
2	South Africa can competitively produce wood products for global markets.	Delays in implementing the Forestry Masterplan.
3	Forestry SA is an active wood growers association.	Complex land ownership and community arrangements.
4	Government commits to Forestry Masterplan and efficient Water Use Licence processing.	Water allocation challenges and complex licence and EIA processes.
5	Carbon credits could boost plantation profitability.	Local sawmilling industry faces ongoing challenges.
6	South Africa has proven outgrower schemes and community partnership models.	

17,000 jobs

6% best case CAGR

7% wood pulp
[2018-2026]

4.2% chemical cellulose
[2018-2026]

Ehlanzeni District Municipality

Summary: The citrus value chain

Established industry

To boost agricultural productivity and economic growth, three priorities are set: 1) increase citrus production; 2) grow the processing and packaging sector; and 3) expand into new regions. A key intervention is installing shade netting for citrus, which reduces weather-related yield losses and improves yield consistency. Shade netting, as noted by the Bureau for Food and Agricultural Policy (BFAP), offers a solid return on investment and creates 0.35 jobs per hectare. Furthermore, emerging citrus farmers benefit from consistent demand for processed products (like juice or oil), aiding their progress towards exporting high-quality fresh produce. Citrus cultivation is labor-intensive, generating approximately **5.22 jobs per million ZAR of output**, highlighting its employment potential.

	Success factors	Hurdles
1	Shade netting IP in SA's 2022 agri-masterplan	EU Citrus export trade dispute
2	Support from citrus growers association (CGA)	National logistics challenges
3	Funding for small and black-owned citrus growers	
4	Growth in AGOA duty-free citrus exports	
5	Upcoming maturation of citrus trees	
6	Nkomazi Special Economic Zone (SEZ)	

8,000 jobs

8.15% CAGR

Ehlanzeni District Municipality

Summary: Tourism

Established industry

Mpumalanga has world-class tourism assets, the maximisation of which is depressed by transport efficiency and personal safety concerns. Strategic measures can be taken to overcome these barriers to growth. Combined with an improved range and mix of tourism products, Mpumalanga's tourism sector could take more advantage of booming tourism in South Africa. Accommodation and Catering has a good labour intensity, at **4.73 jobs per ZAR 1 million of economic output.**

	Success factors	Hurdles
1	World-class tourism assets	Deteriorating transport infrastructure impacting tourism routes
2	Skywalk construction at God's window through PPP to attract tourists	Poor safety and security affecting international tourism
3	Recently published Tourism Master Plan	Unfavorable visa legislation deterring international tourists

21,000 jobs

9.6% CAGR

Ehlanzeni District Municipality

Summary: Hemp for industrial applications

Emergent industry

A portion of the ~**240,000 hectares of degraded mine land** in Mpumalanga could be used to cultivate hemp for industrial uses (e.g. fibre) to serve strong and growing demand. Localising the industrial processing of hemp within Mpumalanga would amplify the impact.

An estimated 24,000 direct jobs can be created in hemp cultivation when applying a conservative estimate of a 10% conversion of mine land that requires rehabilitation. (**1 FTE job per hectare in cultivation**). An additional 297 full-time jobs could be created to process 144,000 tonnes of hemp per year into high-value bast fibre, hurd and green micro-fibre. (24,000 ha of production, at 6 tonnes per ha, requiring 27 small processing plants at 11 jobs per plant).

	Success factors	Hurdles
1	Availability of non-competitive mine land	Drugs Act prohibition
2	Mining industry's interest in agriculture	Processing gap
3	Policy reforms for hemp cultivation	Water resource constraints
4	Government support in agro-processing	Commercial viability unknowns

24,000 jobs

125.1 % global import demand (2018-2022)

15.9 % SA' share in world exports (2018-2022)

Nkangala, Ehlanzeni, Gert Sibande, District Municipality

Summary: Sustainable Aviation Fuel (SAF)

Emergent industry

South Africa has the immediate technical potential to produce 3.2 billion litres of SAF annually, from sugarcane A-molasses, lignocellulosic material, Hydroprocessed Esters and Fatty Acids (HEFA) and industrial off-gas. An estimated 25,000 direct jobs could be created in the SAF value chain in Mpumalanga. This is based on having three final production facilities in Mpumalanga, with proximity to final production facilities in Gauteng; the pre-existence of a sugar mill in Mpumalanga; and a lower than provincial average of Invasive Alien Plants.

	Success factors	Hurdles
1	Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) incentivising SAF uptake from 2027	High cost of SAF compared to conventional jet fuel
2	Book and claim certification for SAF usage	Limited local SAF refining capability
3	Successful SAF trials in South Africa	Challenges in securing steady SAF demand
4	Sasol-Topsoe partnership for SAF production	Restrictions in green accounting for kerosene production
5	Sasol's Fischer-Tropsch process with woody biomass	Mining legislation impacting agricultural use of mine land
6	South African sugarcane industry's interest in SAF	
7	South Africa's grain/legume oil extraction capabilities	

25,000 jobs

26.2% CAGR [2022-2050]

Nkangala, Ehlanzeni, Gert Sibande, District Municipality

Summary: Global Business Services

Emergent industry

With global businesses increasingly leaning towards outsourcing and offshoring to optimise costs and enhance operational efficiencies, South Africa emerges as a distinguished outsourcing hub. Mpumalanga has a rich pool of English-speaking youth (21,000) who could be upskilled through rapid work readiness programmes. The province has the potential to set up cost-effective operations that can focus on mining, mining and agriculture as retail, banking, and telco are already well-serviced elsewhere in the country.

Based on the talent pool in the province and observations from other provinces, 5000 direct jobs could be created in administration support (e.g., order fulfilment) servicing the national level or regional level. Database development and management, shared services space (processing work, some customer-facing work) for mining, manufacturing and mining sectors. Content moderation is another global area of demand that continues to grow.

	Success factors	Hurdles
1	Tax incentives for companies creating 30+ jobs for youth in three years	Competition with established BPO destinations like India, Philippines, Malaysia
2	South Africa's competitive business environment with reliable broadband and favorable exchange rate	Work interruptions due to power outages
3	Work readiness programmes available for talent upskilling	AI's evolving role in job displacement, particularly in AI voice calling

5,000 jobs

22% CAGR
[2018-2023]

Nkangala & Ehlanzeni District Municipality

Summary: Agrivoltaics in farming

Emergent industry

Farms, especially those with irrigation, cold storage, packing and processing requirements, would benefit from agrivoltaics. Agrivoltaics combines solar photo-voltaic (PV) energy generation and farming in a mutually reinforcing manner. Depending on the configuration, agrivoltaics can help mitigate climate and production risks.

~5,400 jobs could be created in the installation of agrivoltaics. Based on a 10% conversion rate of 12,351 ha of citrus, stone, pome fruit, table grapes and avocado production in MP (agrivoltaics: 4.36 FTE jobs per ha).

	Success factors	Hurdles
1	High demand for reliable electricity and concerns about extreme weather	Capital cost barriers for small and black farmers
2	Supportive industry associations like Citrus Growers Association (CGA) and HORTGRO	Agrivoltaic technology's development and application maturity
3	Blended finance funds for Black-owned citrus and pome & stone fruit growers	

5,400 jobs

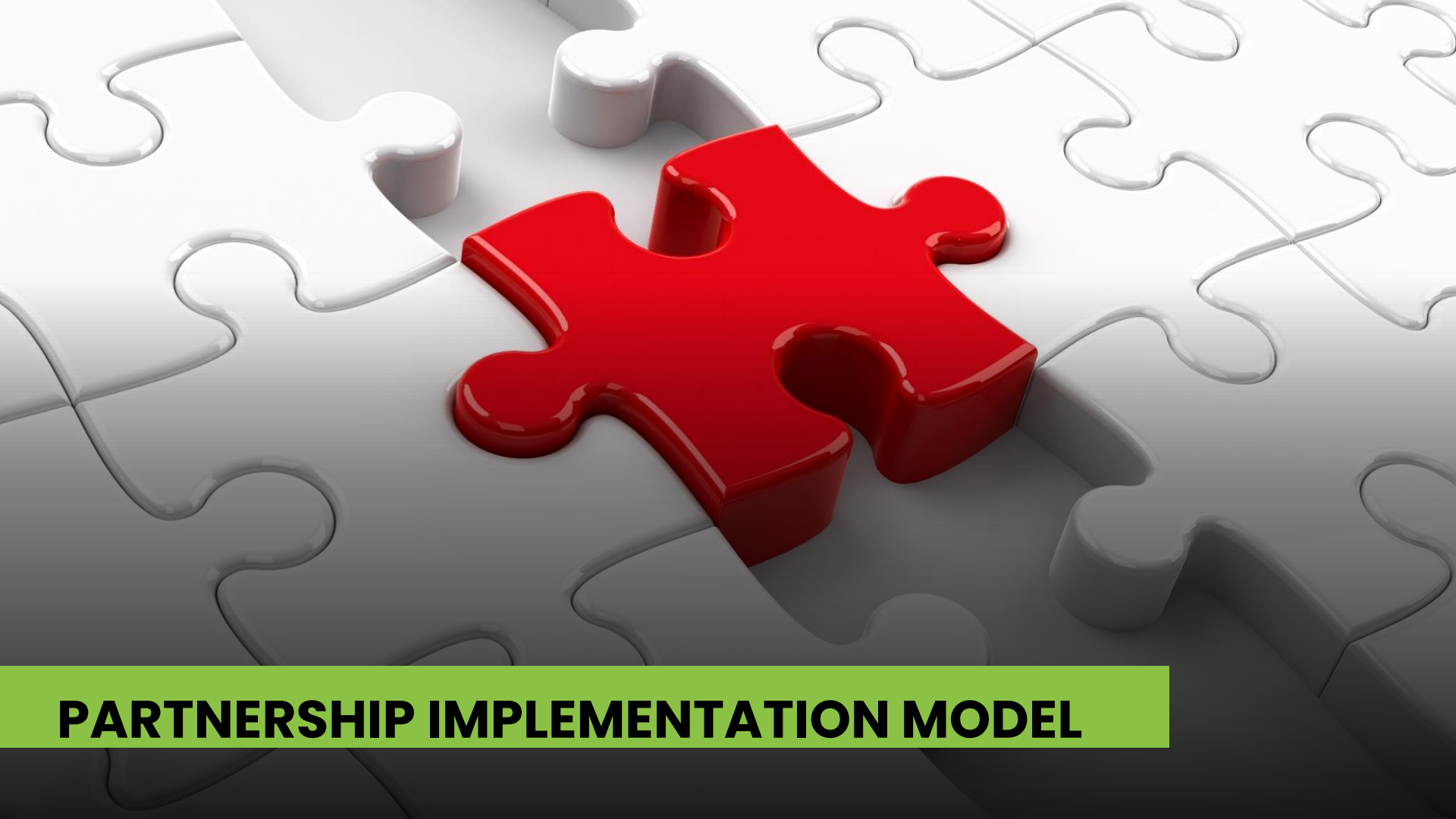
R3.67 Billion
market value in Mpumalanga

R16.5 Billion
solar-powered irrigation systems market value

Nkangala, Ehlanzeni, Gert Sibande District Municipality

The Ask Today (and next steps)

Which 6 opportunities should be taken forward?



PARTNERSHIP IMPLEMENTATION MODEL

Economic Diversification

INTENTION: The Partnership Implementation Model seeks to diversify the local economies in the coal belt through the development of bankable and livelihood projects to stimulate local economic activity.

HOW: Through bottom-up engagements with various stakeholder groups to uncover levers of change towards establishing partnerships

WHY: To address the crisis of implementation in South Africa through stakeholders and partners working collaboratively lead and steer change, strengthen delivery processes, address trust deficits, and improve development outcomes

"Co-creation and Co-implementation"

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Methodology and Principles

Why Partnerships and Partnering?

Economic Diversification is **complex** and it is seldom that **one organisation** or part of society has **all the resources or ideas** necessary to **address existing challenges**. It ***requires all of society*** going beyond 'business as usual'. Economic Diversification requires all of us to ***work collectively towards solutions***

Focus on cross-sector partnerships that take a ***whole-of-society approach***. They involve partnerships between the public sector, business, organised labour and the community

Partnership is about co-design, co-ownership and co-implementation of solutions

The Just Transitions requires Collaborative Partnerships

01 Systems Approach

Incorporates relational systems intelligence into planning and implementation processes at national, regional, local and neighbourhood levels

02 Wholist Approach

Participants to 'see' the system as a whole and their role in the system, to move beyond their own needs, mandates and priorities.

03 Co-Planning, Co-design and Co- Implementation

Communities are considered implementers, not as passive bystanders in their own development

04 Shared Understanding & Shared Future Vison

PIM Framework help stakeholders across government and society develop a shared understanding of the problem, arrive at a shared vision of the future, and work together in practice

Coal Belt Partnership Implementation Model

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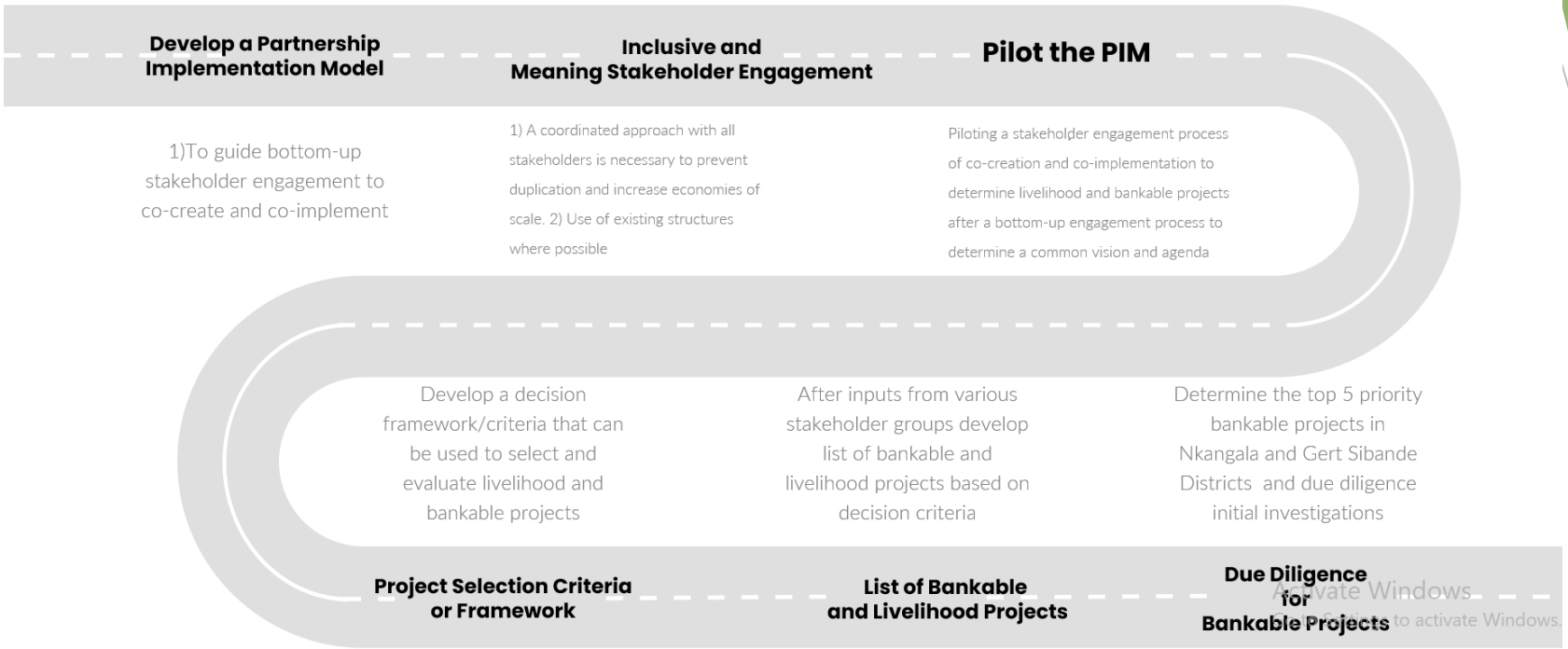

Partnering for Action and Improved Results

Partnership Implementation Model

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Creating a Common Vision

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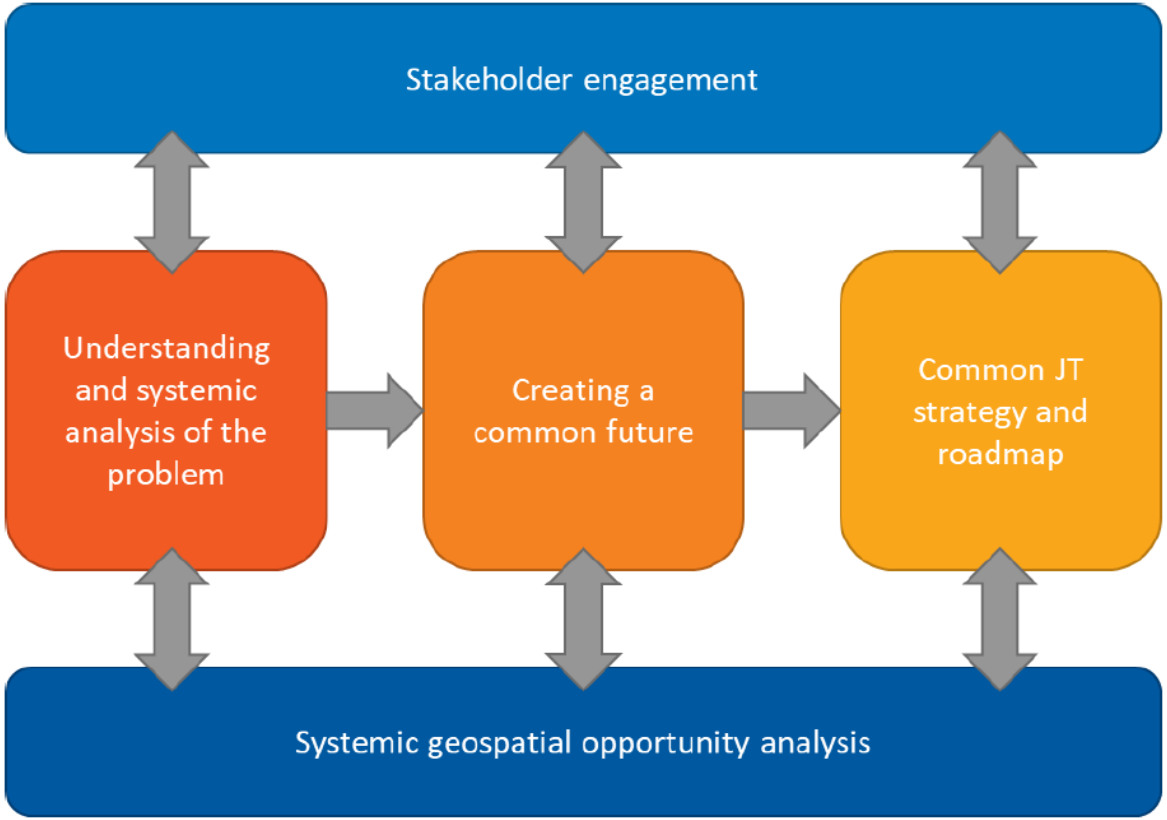
Partnership Implementation Model



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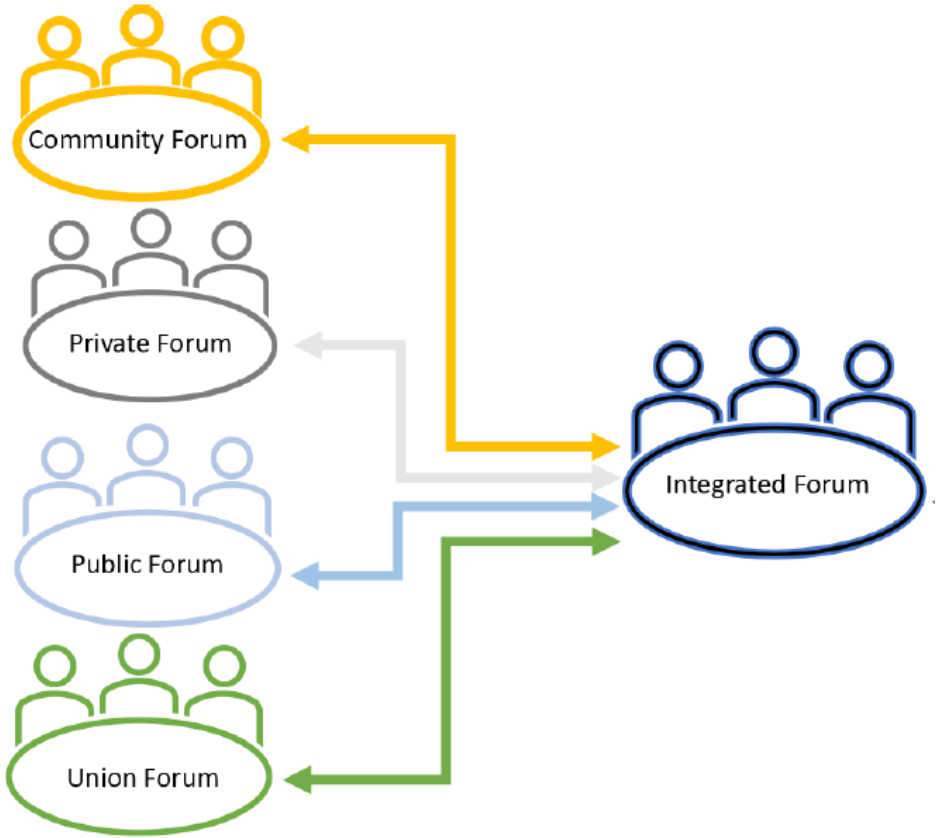
PIM Planning and Implementation



Your Role....

Putting Communities First

- ✓ Communities must be active participants in securing their future within the Just Transition
- ✓ Communities better understand what is required within their communities
- ✓ We are interested in hearing from you and having you lead the process
- ✓ **Together with your respective municipalities we will be hosting for detailed workshops in February and March 2024**

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SOCIAL OWNERSHIP MODELS ON ENERGY TRANSITION

Definition

Study defined social ownership as 'pro-poor and pro-people' programmes based on human need.

- Social ownership - ‘between state and private’; relationship/organisation
- Cooperative ownership; worker/community share-ownership; municipal partnerships; some public-private partnerships depending on the ownership model.
- ‘Community’
- Participation and benefit.

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South African experiences - Lessons

Intermediary facilitation (e.g. NGO's or academia) is common critical enabler for project initiation, funding and implementation.

Quality of relationships between project stakeholders is crucial success factor for projects, especially the relationship with end-users.

Project stakeholder model and implementation design needs to involve municipalities.

Building upon the locally existing capacity is important to ensure effective utilisation and maximum benefits.

Key Findings

MODEL 1: MINI GRID

Mini-grid owned/co-owned/managed by residents
For access
Rural or informal settlements with no grid
Provides (free) basic electricity to households.

MODEL 2: TOWNSHIP/TENANT CO-OP

Co-operatively owned PV solar generation
Rooftop (household - SSEG) and/or array on Public Land (IPP) or community building (SSEG)
Grid-tied, urban infrastructure
Feed-in to/wheeling through municipal grid
Smart metering can integrate household with array or Community building
Can integrate households or be owned by households.
"Massive rollout of rooftop solar".

MODEL 3: COMMUNITY LAND IPP

Large scale generation by private capital on community owned land, selling to Eskom as part of REIPPPP
OR
Selling to private (industrial or mining) offtakers
Share ownership of minimum 10%
AND/OR
Rental Income.

MODEL 4: WORKER OWNED IPP/EG

Share or direct ownership of EG (embedded generation) on factory/mine/repurposed power station or institutional rooftops by workers.

MODEL 1: MINI GRID

Mini-grid owned/co-owned/managed by residents

For access

Rural or informal settlements with no grid

Provides (free) basic electricity to households.

- Model was recognised for the potential to benefit underserved communities, relieving energy poverty, and providing ownership and benefits to community members.
- Potential for multiple social benefits in addition to access to electricity, as well as local economic benefit through use of energy for stimulation of business and enabling economic inclusion

MODEL 2: TOWNSHIP/TENANT CO-OP

Co-operatively owned PV solar generation
Rooftop (household - SSEG) and/or array on Public Land (IPP) or community building (SSEG)
Grid-tied, urban infrastructure
Feed-in to/wheeling through municipal grid
Smart metering can integrate household with array or Community building
Can integrate households or be owned by households.
"Massive rollout of rooftop solar".

- The Township/Tenant Co-op model was recognized for its potential to provide energy security, cost savings, and stability, as well as address load-shedding issues.
- Potential for significant local economic benefit, some local job creation as well as significant implications for job creation in the broader manufacturing of RE components, as well as environmental benefit in terms of the country's commitments to reduction of carbon emissions.

MODEL 3: COMMUNITY LAND IPP

Large scale generation by private capital on community owned land, selling to Eskom as part of REIPPPP

OR

Selling to private (industrial or mining) offtakers

Share ownership of minimum 10%

AND/OR

Rental Income.

- The Community REIPPP model was seen as a way to mitigate climate change and provide stable energy supply.
- Potential for significant economic benefit to rural communities

MODEL 4: WORKER OWNED IPP/EG

Share or direct ownership of EG (embedded generation) on factory/mine/repurposed power station or institutional rooftops by workers.

- The Worker Owned Renewable Energy model received positive feedback for its potential to empower workers, reduce the risk of unemployment because of decarbonisation and generate income.
- Has implications for retention of jobs in transitioning industries as well as potential for job creation in new RE industries.

DEVELOPING CAPACITY: RECOMMENDATIONS

Model 1: Capacity building is required where appropriate, with rural municipalities/district municipalities and traditional authorities.

Model 2 (grid-tied to the municipal grid) - the municipal electricity department is a key partner.

Models 1 and 2: imperative that municipalities are capacitated to partner in the implementation of SORE for residents of rural villages, townships, and informal settlements.

Recommendation all models: develop a generic Modelling Tool as an accessible 'toolbox'. Make available for stakeholders in order to both understand and design the projects to be implemented.

Result: build capacity especially among community and labour stakeholders, as social owners, to understand exactly what benefits will accrue to them and to manage expectations.

Dedicated training programmes for municipal electricity departments as well as officials in other related departments (IDP, economic development, accounts).

CONCLUDING THOUGHTS

1. Economic diversification is important for the future of Gert Sibande & Nkangala Districts
2. Communities best know their own localities, therefore it's important to tap into their agency for the identification of bankable and livelihood projects
3. Social Ownership projects mobilise around economic opportunities to ensure communities become active owners of local productive assets.