



MPUMALANGA
GREEN CLUSTER
AGENCY



JUSTSA

INDUSTRY BRIEF

Developing bankable projects for economic diversification on mine-affected communities using agriculture as a critical lever

MAIN INSIGHTS

- The agriculture sector holds great potential to contribute to Mpumalanga's economic diversification in a just transition.
- The key opportunities highlighted in this brief include industrial hemp, niche products and energy crops (with estimated market sizes of **R1.2 billion**, **R250 million** and **R186 million** respectively).
- During multi-stakeholder engagements, it was confirmed that funding for project preparation, information asymmetry and policy misalignment remains key barriers to entry for these opportunities.
- To address some of these barriers, it was identified that:
 - Innovative funding mechanisms need to be developed to capture social inclusion for emerging farmers.
 - There is a need to develop primary processing facilities in the province to fully unlock the industrial hemp value chain.
 - More knowledge hubs are needed for training and incubation for new and emerging SMMEs in agriculture.

This brief is written for:

- Investors who want to understand new and emerging opportunities for economic diversification applicable for the Mpumalanga province.
- Mining companies who want to understand opportunities for mine land rehabilitation using agriculture as a critical lever.
- Private companies looking to diversify their revenue streams.

1 CONTEXT

The Mpumalanga Green Cluster Agency, together with its implementation partners under the Just SA project, supports the implementation of pathways towards a just transition towards an environmentally sustainable, climate-change resilient, low-carbon economy and just society. This entails a series of multi-level stakeholder dialogues on just transition and formulating concrete, sustainable and just green economy plans for a diversified regional economy across the different sectors. In agriculture, this forms part of a series of multi-stakeholder engagements to fully understand how a diversified economy can be achieved using agriculture as a critical lever. Agriculture contributes significantly to South Africa's economy and plays a vital role in sustaining livelihoods and providing food

security. The sustainable agriculture sector is a key sector of Mpumalanga's economy, and holds great potential to contribute to labour-absorptive greener economic growth and economic diversification.

Mpumalanga houses the vast majority of coal power stations and coal mining activities. The transformation of the South African energy system to cleaner energy sources is gathering momentum. As a province, Mpumalanga has an abundance of additional resources that can be harnessed sustainably. Mpumalanga has been proactive in exploring opportunities in the green economy for opportunity-lead growth and to transition the province's economy to enable it to become a labour absorbing green focused region.



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THE JUST TRANSITION CONTEXT IN SOUTH AFRICA

South Africa has substantial just transition ambitions, as outlined in the Presidential Climate Commission’s *Framework for A Just Transition in South Africa* published in 2022 (PCC, 2022). The definition of a just transition in this framework presents a transition to an economy that both reduces climate emissions and contributes to the goals of decent work for all, social inclusion, and the eradication of poverty. The *Framework for A Just Transition in South Africa* clearly puts people at the centre of decision making. At the heart of this vision is the idea of empowering and equipping South Africans to access new opportunities and build towards an environmentally sustainable and

economically prosperous future. Mpumalanga is the key source of SA’s coal supply with over 60% of the province’s surface area subject to mining. A number of mines that supply coal power stations will be decommissioned in line with the decommissioning plan for these power stations in the Integrated Resource Plan of 2019 (IRP 2019) which highlights these areas as just energy transition hot spots (Figure 1). Transitioning Mpumalanga’s coal-heavy economy to higher levels of agricultural output enables new business opportunities and associated jobs to improve the long-term economic resilience of the province.

Mpumalanga - Eskom Power Stations

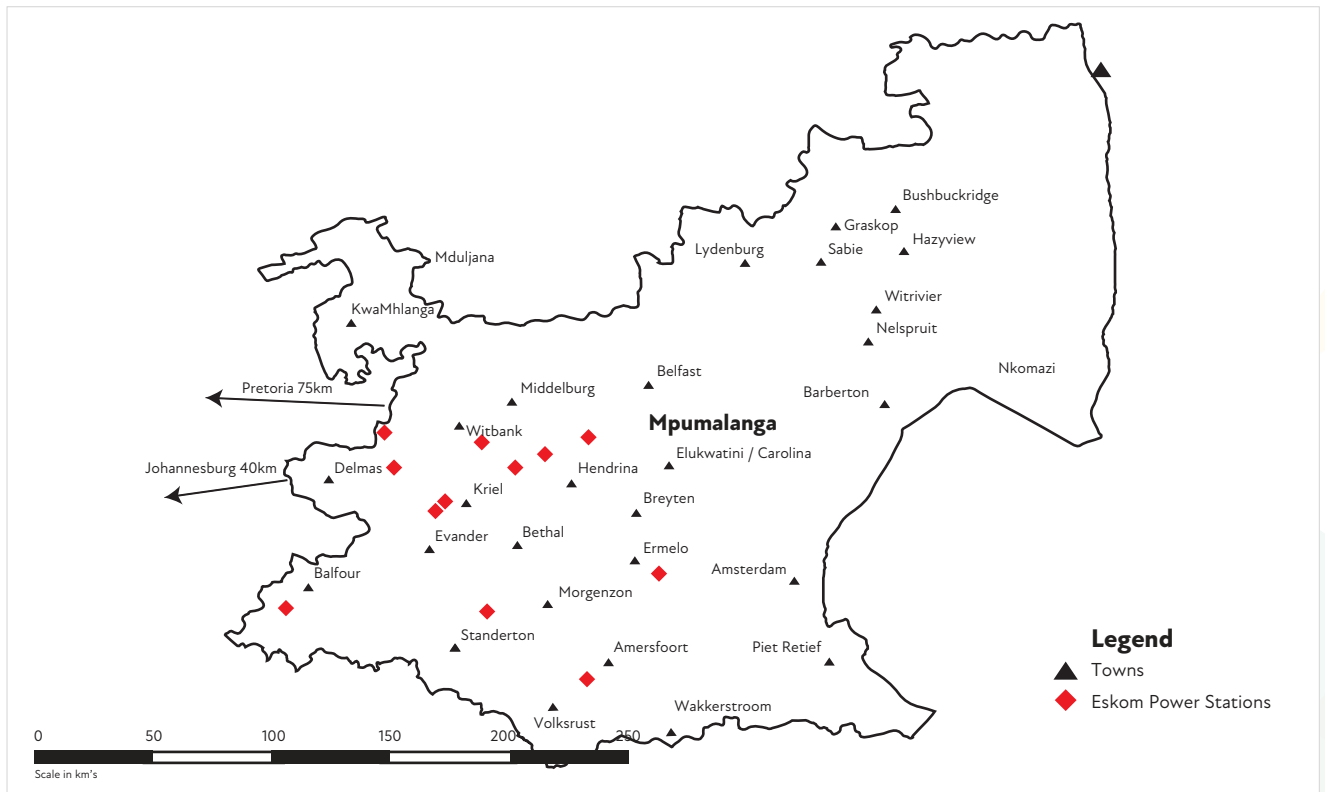


Figure 1: Eskom power stations in Mpumalanga, 2022
 Source: Nel et.al., 2022



Agriculture is a labour-intensive sector both in terms of employment per unit of output and in terms of its potential as an employment multiplier. However, agriculture is resource intensive and accounts for a substantial portion of the province’s natural resource use (~56% of land for cropland, pastures, and forests and ~55% of water use). Furthermore, mining and current agricultural practices in the province have led to soil degradation and environmental pollution. To address these challenges and leverage the

opportunities enabled by an expanded agriculture sector, efforts are required to transition to more sustainable agricultural practices.

Furthermore, the extent to which climate change may negatively impact agriculture and the associated employment depends in part on the ability of farmers to adopt new sustainable and climate-adaptive practices and technologies. The opportunities for economic diversification are highlighted in **Table 1**.

Table 1: Economic diversification opportunities in Mpumalanga

Opportunity	Drivers	Macro-environment	Risks & Barriers	Expected Timeframe
<p>Industrial hemp</p> <p>Market size R1.2 billion</p>	<ul style="list-style-type: none"> Bio-remediation properties of industrial hemp, especially for post-mine land rehabilitation. Enabling regulatory environment for industrial hemp cultivation over the past two years. 	<ul style="list-style-type: none"> The 2023 South African budget speech highlighted industrial hemp as a sustainability anchor with a projected market value of R426 billion by 2026. The cannabis sector (which includes cannabis and hemp) has been identified as one of the 14 priority sectors in SA, by the Office of the Presidency. Currently there are pilot studies exploring industrial hemp cultivation on mine land to assess economic viability. 40 hemp permits have already been issued in Mpumalanga. Over R100 billion is needed to fully unlock the hemp value chain in SA. 	<ul style="list-style-type: none"> Inconsistent financial information provided by mines and Department of Mineral Resources and Energy (DMRE) for mining rights and closure certificates. Minimum viable size for a profitable cultivation is 50ha. Lack of knowledge around seed genetics, which feeds into suitability for the different industries. Possible conflict with indigenous growers. Lack of local processing capacity - producers may battle to find off-takers in the short term. 	Short to medium term
<p>Niche products</p> <p>Market size R250 million</p>	<ul style="list-style-type: none"> Economic diversification under the just transition. Growing demand for niche products to satisfy specific export markets. AfCFTA ¹ 	<ul style="list-style-type: none"> There is a growing local demand for niche products such as yam, cassava and other root crops, as there are high importation costs associated with these products. SADC region is already in the top ten export destinations for SA agricultural products e.g. grain. Maputo development corridor for exports connecting the landlocked regions of Kingdom of eSwatini and SA to the Mozambique and the Port of Maputo. 	<ul style="list-style-type: none"> Unclear off-take agreements. Limited market knowledge on specific commodities. Constraints with cross-border logistics. 	Short to medium term
<p>Energy crops</p> <p>Market size R186 million</p>	<ul style="list-style-type: none"> Growing demand for sustainability within the aviation industry. Price volatility of fuel and oil. Sugarcane master plan aims to diversify production to biofuels in SA. Ability to grow crops on degraded land, unfit for human consumption. 	<ul style="list-style-type: none"> Part of the sugar value chain master plan 2030 is to develop detailed strategies and plans to provide and support appropriate crop diversification by growers as alternatives to sugarcane and support enhanced financial viability of sugarcane growers. Currently 14% of arable land is underutilised, and most of it is in the former homelands. These areas lack market access (which biofuels plants could provide) and infrastructure (which agricultural and infrastructural support programmes should provide). 	<ul style="list-style-type: none"> Wariness by government around competition with food crops. Unclear biofuels regulation to support growth of the industry. Unclear business/economic model. 	Medium to long term

¹ AfCTA: African Continental free trade agreement was established in 2018 which has 43 parties and 11 signatories, making it the largest free-trade area by number of member states, after the World Trade Organisation and the largest in population and geographic size, spanning 1.3 billion people across the world's second largest continent. The aim of the agreement was to boost intra-Africa trade and eliminate trade barriers

3 INDUSTRIAL HEMP

Industrial hemp has been identified as a promising crop that can supply sustainable raw materials to various industries, including pharmaceuticals, manufacturing, construction and textiles. SA is in the process of removing various legal, political and social barriers for the crop across the value chain. The sector is nascent, but is estimated to have a market value of R426 billion by 2026, and a potential to create more than 130 000 direct new jobs (SONA, 2023). After the reclassification of hemp as an agricultural crop in 2021, there has been significant interest in this market, with 371 hemp permits already issued for primary production as of 11 March 2023. In Mpumalanga, over 40 permits have been issued at the time of writing, because investors are realising the market potential of the crop and the value chains it can potentially unlock. The primary production of industrial hemp has the potential to remediate polluted soil (e.g. on mine lands) through its ability to bio-accumulate heavy metals. It is also a carbon sink, with an ability to sequester twice as much carbon as most trees (estimated 40 tonnes of CO₂ per year) (IEJ, 2023). This supports climate change mitigation and allows for income diversification through the sale of the biomass as well as agricultural carbon credits. Mining companies are therefore looking to explore this opportunity through their corporate social investment projects to promote a diversified and self-sufficient post-mining economy.

It should however be noted that tapping into this opportunity would only be for end-uses (such as textiles and construction industries) other than human consumption, because of the wariness around consuming products from polluted soils. Opportunities in the pharmaceutical sector can however be explored through soil-less production systems found in

controlled environment agriculture. In Mpumalanga, a state-of-the-art cannabis centre of excellence is currently being established by the Department of Agriculture, Rural Development and Land and Environmental Affairs to explore cannabis production for the pharmaceutical sector. Mpumalanga has been identified as a primary processing node and currently there are strides by the government to create agro-processing facilities to fully unlock this sector as indicated in the Agriculture and Agro-processing Master Plan (2019).

The barriers to entry to this opportunity include:

- **Inconsistent information provided by mines and the DMRE for mining rights and closure certificates:** This makes businesses uncertain about land ownership and how farming operations can be managed. Since mining is the core business for mining companies, establishing a consortium with farmers and service providers is thus far seen as a preferable option for unlocking this opportunity.
- **Lack of knowledge around seed genetics to supply products into the different industries:** Currently, the Agricultural Research Council (ARC) together with the Council for Scientific and Industrial Research (CSIR) are working on developing cultivars that feed into the different industries that have been identified for the South African market.
- **Possible conflict with indigenous growers:** There is a rich history of indigenous hemp growers who have been participating in the informal markets. Although there are conversations around converting these growers for them to be able to tap into formal markets, others are still hesitant particularly because of the onerous process of hemp licence registrations.

4 NICHE PRODUCTS

This opportunity is of interest to agricultural producers or investors that are looking to satisfy specific markets such as high value crops, mostly for exports (summarised in Table 1). This type of production is usually done at smaller scale in comparison to most commercial farms, but produces consistently high yields and quality. Saffron or high value green vegetables are examples of such niche crops for export. This is a great opportunity for Mpumalanga because of its geographical position and the enablers such as the African Continental Free Trade Agreement (AfCFTA) as well as the Maputo Development Corridor. SA's sophisticated consumer base and the diversity of the country makes it easier for such opportunities to be explored for the local

market as well. Mpumalanga can benefit from localising the production of such products to stimulate job creation.

The barriers to entry for these markets include:

- **Market development:** Markets are not fully established, making entry to specific opportunities and getting off-take agreements difficult.
- **Limited market knowledge on specific commodities:** Because of the nature of the opportunity and the kind of production it entails; farmers may find it difficult to tap into this production as they are not familiar with the specific commodities.
- Constraints with **cross-border logistics** for the export markets.

5 ENERGY CROPS

Biofuels development in SA has been centred around rural development and the provision of economic opportunities for those communities by creating a new market for their produce. In addition to the international oil price - which largely determines the competitiveness of biofuels prices - the viability of the biofuels industry is predominantly a function of the cost of agricultural feedstock, which is typically 70% of total costs.

In SA, the crops that have been considered for energy production include soya beans, canola and sugar beet. The price volatility of fuel and oil has enabled businesses to consider alternative energy supplies, especially for the aviation industry. One enabler for this opportunity is the South African Sugar Value Master Plan (2030) which aims to diversify production since it is no longer profitable for the industry to focus on sugar production only. One of the objectives of the master plan is to develop detailed strategies and plans

to provide and support appropriate diversification by growers as alternatives to sugar production and support enhanced financial viability of sugarcane growers. This opportunity can be realised by mines that are currently looking to explore economic diversification opportunities, as they would be able to produce energy crops on degraded land, where it is inappropriate to grow food crops.

Important considerations include:

- The quality of the rehabilitated land is important as crops require good soils for production.
- Wariness around competition with food crops by government and food system activists.
- Unclear business model/economic model as this opportunity has not been explored in SA. Mining companies (through their sustainable production portfolios) are currently exploring the use of energy crops to develop alternative feedstock for biofuels.

6 STAKEHOLDER ENGAGEMENTS

To fully understand these climate-adaptive opportunities in agriculture, especially with respect to economic diversification in mine affected communities; there was a need to host multi-stakeholder engagements. On 13 September 2023 a workshop was held by the Mpumalanga Green Cluster Agency supported by GreenCape and aimed to:

- Create awareness on new and emerging opportunities in agriculture which can be explored in economic diversification.
- Identify the right approach in designing funding architecture for agriculture related projects.

- Identify the barriers associated with each opportunity, and mitigation strategies.
- Identify the drivers for the associated opportunities.

Relevant stakeholders were invited and representatives from mining companies in South Africa (Seriti, Anglo American, Sasol and Sibanye Stillwater) the public sector (Department of Agriculture, Department of Forestry and Fisheries, Department of minerals resources and energy) as well as academia and SMMEs in agriculture. Below are some of the key insights from the workshop.



KEY INSIGHTS FROM THE WORKSHOP

◆ **Funding:** There is a need to develop innovative funding mechanisms to move projects to bankability because most funding is for research and development. Identifying the right projects (possibly using the pre-existing pilots) and developing them to commercial viability through proper project preparation. There are currently pilot studies to assess viability of some of the opportunities highlighted in this brief and therefore a need to set funding aside to push the projects to bankability.

◆ **Land availability and rights:** As much as this is a driver for most of the opportunities, it is also a barrier, in that mining rights still sit with the mining companies and therefore land availability and use is still an asset of the mining companies. Getting information through the DMRE is important as most of this information sits within their jurisdiction. Furthermore, it is important to develop consortiums with various stakeholders such as mining companies, and SMMEs which further de-risks and creates a collaborative effort on the projects.

◆ **Information asymmetries:** Mining companies are actively undertaking pilots to unlock these economic diversification opportunities in

agriculture. The challenge is that they are currently working in silos, repeating the same project concepts and run the risk of doing pilot studies and not the entire commercial viability of projects. To avoid this duplication and improve knowledge sharing, greater collaboration could help achieve common goals. This entails mining companies working together to achieve a common goal of economic diversification for the most affected communities. A further need to develop training hubs to upskill and reskill people across the different municipalities. TVET colleges in Mpumalanga are keen to explore what these would look like and are in the process of registering new curriculums that capture these new skills. Suggested solutions included the development of consortiums with relevant stakeholders from government, private sector and academia to understand the role each stakeholder could play in project implementation.

◆ **Policy coherence:** The misalignment of policies across the different departments from national, provincial and local government, was identified as a challenge. Facilitating policy coherence and better coordination across the different departments is needed to fully unlock the agriculture value chain.

NEXT STEPS

In the upcoming 2024/2025 financial year, the Mpumalanga Green Cluster Agency will host a series of workshops which will include financiers and other relevant stakeholders so that they can understand economic diversification in the context of Mpumalanga. Furthermore, the team will facilitate consortiums to fully unlock these opportunities.

For further information and support on any of the content provided here, please contact the cluster's agriculture sector desk: agri@mpumalangreencluster.co.za and visit the website at www.mpumalangreencluster.co.za to access the latest market intelligence reports.



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