The Contribution of Sasol South Africa to the National and Local Economies

27 August 2024

Purposes and uses of this study

While the study reported here has been executed with great care, it is necessarily based on a broad range of external assumptions and on our best understanding of the facts and underlying circumstances as they were at the time of writing.

Furthermore, for good practical reasons and in line with best practice this report is based on economic analysis which relies on single-point inputs for many parameters rather than uncertainty/possibility ranges. These single-point inputs are based on best available information at this time. As with any model, should these inputs change, then the modelling results will change accordingly.

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1 Introduction and Executive Summary

1. FTI Consulting ("**FTI**") is instructed by Sasol South Africa ("**SSA**"), to quantify the contribution of SSA to the national economy, and to the local economies (at the level of the municipality) in which SSA has operations. SSA has also requested that FTI conduct an analysis of SSA's backwards and forward linkages within the South African economy, to assess the company's integration with other sectors.

2. This analysis provides the context within which the National Air Quality Office ("**NAQO**") must evaluate SSA's application for a change in the basis on which SO_2 emissions are measured at their Secunda Operations.

3. In September 2021, SSA's board approved a decarbonisation strategy, after which SSA developed various pathways to achieve the required greenhouse gas ("**GHG**") emission reduction and to reach SO_2 compliance by 1 April 2025. Emission sources are regulated in accordance with atmospheric emissions licences ("**AELs**"). AELs are based on the Minimum Emissions Standards[1] ("**MES**") established on 22 November 2013. In June 2022, SSA applied to the NAQO for its SO_2 emissions from boilers at its Secunda Steam Plants to be regulated based on load, rather than as concentration-based emissions. This application ("**12A application**") was made in terms of Clause 12A of the MES, which permits existing plants to be regulated on an alternative emissions load.

4. For Secunda's Utility Plant to continue to operate any of its boilers, SSA must be granted a load-based dispensation in terms of their 12A application. To meet lower emissions targets by 1 April 2025, Secunda operations will need to shut down five or six of the 15 boilers at the Utility Plant. A load-based dispensation will facilitate a reduction in emissions that will be sufficient to enable the Utility Plant to continue to supply the Process Plant with steam.

5. We understand that if SSA's 12A application is unsuccessful, Secunda operations will not be able to continue. SSA will not be able to run the boilers at the Utility Plant, there will be insufficient steam and electricity to run the Process Plant, and the facility will shut down. We understand that should SSA's Secunda operation shut down, the continuation of other SSA operations in Sasolburg is jeopardised.

6. It is against this backdrop that we quantify the contribution of SSA to the South African economy. Should SSA's operations cease in South Africa, there may be considerable implications for the South African economy. In this report, we describe the avenues via which SSA contributes to the economy, as a purchaser of inputs for its own production, and as a producer and supplier of inputs for production in other sectors. We start (in Section 2) by describing the route via which SSA supports activity in the South African economy, through linkages to other sectors. We describe the process through which the products or outputs of one sector become the inputs for production processes in other sectors. Upstream sectors provide products as inputs to downstream sectors. Downstream sectors therefore create demand for inputs via backwards linkages to upstream sectors. Similarly, upstream sectors meet demand for goods and services via forward linkages to downstream sectors.

[1] Listed Activities and Associated Minimum Emission Standards identified in terms of section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) published in Government Notice 893 in Government Gazette 37054 on 22 November 2013, as subsequently amended.

7. A company's economic contribution is calculated by the demand it creates for inputs from upstream sectors via its backward linkages with these sectors. Relying on publicly available data on these backward linkages, **we calculate[2] the economic contribution of sectors (or companies, like SSA) by their value add or development of inputs received via backward linkages, from upstream sectors**.

8. Section 3 presents this contribution, calculated on the basis of SSA's operation in FY21: At a national level, SSA's contribution is substantial. Its operations supported:

   - 4.84% of South Africa's total GDP in 2021;
   - 3.07% of South Africa's total employment in 2021;
   - 3.26% of South Africa's labour remuneration in 2021; and
   - 10.06% of South Africa's total government tax revenue in 2021.

9. Another important consideration is SSA's contribution to the regions in which it has operations. Within these regions, SSA's operations are leading participants in the manufacturing sector and provide considerable support for economic activity within the area. Using the same methodology, Section 4 presents SSA's contribution to the Govan Mbeki local municipality in which SSA's Secunda facility operates, and the Metsimaholo local municipality in which SSA's Sasolburg facility operates.

   - Within the Govan Mbeki local municipality, SSA's contribution is substantial. SSA's operations support 65.2% of GDP, 55.0% of employment and 44.7% of labour remuneration within the municipality.

   - Within the Metsimaholo local municipality, SSA's operations support more than 80% of GDP, almost 75% of employment, more than 50% of labour remuneration, and more than 50% of the local municipality's capital requirement.

10. These provinces are under significant economic strain. Mpumalanga has the highest unemployment rate in the country at 38.4% in 2023 Q2, and experienced GDP growth of less than 1% between 2022 and 2023. The Free State experienced unemployment of 36.7% in 2023 Q2, and GDP growth of just 1.5% between 2002 and 2023. The contribution of SSA to local areas of operation is therefore material. Shutting down SSA operations will have considerable consequences for these municipalities.

11. The economic contribution that we describe in Sections 3 and 4 captures the value that arises from SSA's demand for inputs from its supplying sectors via backwards linkages. SSA also supports substantial economic value creation by meeting demand for inputs and products in other downstream sectors. Many industries rely on SSA for crucial inputs into their production processes, and in some cases, SSA is the sole local producer of those inputs. These sectors are vulnerable if SSA's operations become jeopardised.

12. While alternative sources, such as imports, may fulfil some demand for SSA's products in the medium- to long-term, in the short-term many industries face severe supply constraints, such as logistical and capacity constraints and substantially higher import prices. For example, South Africa's gold mining industry depends on liquid cyanide for the extraction of precious metals. As the only supplier of liquid cyanide in South Africa, SSA's production and sales to the gold mining industry are

[2] Appendix A in Section 8.1 provides a detailed discussion on the methodology and data that we use to calculate SSA's economic contribution.

crucial to the industry.[3] In instances where the importation of substitute products is either infeasible or impossible, industries relying on key inputs from SSA may face an existential threat. SSA's integration and interdependence with various sectors of the South African economy is therefore a relevant consideration which is not fully captured by traditional economic impact assessment.

13. To capture SSA's integration with other sectors, Section 5 presents a key sector analysis which examines the strength of SSA's backwards and forward linkages within the economy. It assesses the extent to which SSA creates demand for inputs from upstream sectors (i.e., via backward linkages), as well as the demand for SSA outputs in production processes of other sectors (i.e. forward linkages). Key sectors have strong backward and forward linkages, which means that they both create demand for inputs from their supplying sectors and meet demand for products arising in customers' sectors. Key sectors therefore play an important role in the economy. The analysis shows that **SSA has strong backward and forward linkages within the economy and is therefore a key industry within the national economic framework. This underscores SSA's significant role in supporting economic activity and production in the local economy, alongside a notable reliance on inputs from and demand for goods and services from other sectors.**

14. Having assessed SSA's contribution to the South African economy, and the importance of SSA's role within the economy, we consider the reasons for SSA's economic contribution. An important driver of SSA's economic contribution is its industrial footprint that arises due to the nature of its refining and manufacturing operations.

15. Section 6 presents evidence from a 2019 comparison between the economic contribution of integrated and non-integrated oil companies.[4] Should SSA no longer produce outputs, customers will need to access alternative sources of supply via importation. Section 6 compares the economic contribution of fully integrated suppliers (like SSA) who have refining and manufacturing capacity in-country, with that of non-integrated supplier who use an import model. The comparison shows that **the economic contribution of integrated operators with refining and manufacturing capacity in-country (like SSA) far outstrips that of the non-integrated suppliers**. For both GDP and employment, the contribution per R1 of turnover of integrated companies (like SSA) is significantly larger than that of non-integrated companies.

16. This report shows that SSA makes a considerable contribution to the South African economy, both at a national level and within the local municipalities in which it operates. Indeed, SSA's operations support a significant share of economic activities within those municipalities. SSA is also highly integrated within the South African economy and plays a role in creating demand for products as well as meeting demand for key inputs in various value chains. Finally, even if users of SSA products can replace these with substitutes via, for example, importation, the cost to the South African economy must be considered in terms of the over level of activity supported by SSA. One way of doing this is to compare the economic contribution of SSA to that of companies operating in the same industry (i.e., downstream oil industry) in South Africa. We have shown that SSA's industrial footprint (via its manufacturing and refining capacity) is a significant driver of economic activity and results in a substantially larger economic contribution than companies without refining and

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3 Competition Tribunal of South Africa. (2023). *Tribunal prohibits Sasol's sale of sodium cyanide business to Draslovka.* Available: https://www.comptrib.co.za/info-library/case-press-releases/tribunal-prohibits-sasols-sale-of-sodium-cyanide-business-to-draslovka [Accessed: 12 October 2023]

4 FTI Consulting. September 2021. The economic contribution of the downstream oil industry to South Africa in 2019. Prepared for SAPIA.

manufacturing capacity. The is a pertinent consideration in South Africa's precarious economic climate. It important to consider the unintended economic consequences of a decision which may place SSA's operational future in jeopardy.

2 Framework and Approach: Backward and Forward Linkages

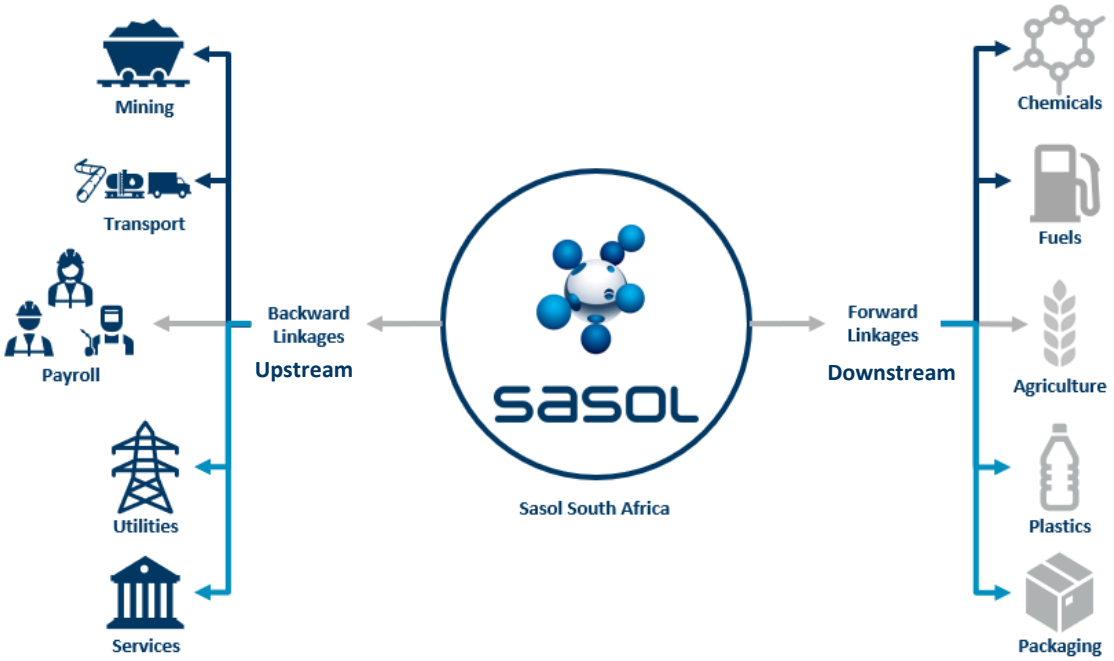
17. Before discussing the methodology used to quantify the contribution of SSA to the South African economy, we discuss the role of forward and backward linkages and what they measure when conducting economic impact assessments.

18. Industries rely on one another for the inputs they need to produce goods and services. When referring to an industry's forward and backward linkages, we are looking at how connected that industry is to other industries in the economy. For example, if SSA produces more (or less) output, it will need more (less) inputs from other industries, like coal mining and utilities such as electricity and water. This is a backward linkage because the output of SSA is increasing (decreasing) the demand for inputs from these upstream industries.

19. On the other hand, if SSA produces more (less) (i.e. there is more (less) demand for its products), it will supply more (less) inputs to downstream industries like plastic products manufacturing, agriculture, and chemicals manufacturing. This is a forward linkage because the output of SSA is increasing (decreasing) the supply of inputs to these industries depending on demand conditions.

20. The backward linkage therefore indicates how much the output of upstream industries will increase (decrease) in response to a given increase (decrease) in SSA's output. The forward linkage indicates how much the output of downstream industries will increase (decrease) in response to a given increase (decrease) in the demand for SSA's output. This process is illustrated in Figure 1 below. We note that the figure does not show all forward and backward linked industries.

Figure 1: Examples of SSA's backward and forward linkages



21. In the figure, the direction of the arrows signals the linkages and not the flow goods and services. For example, backward linkages (signalled by arrows pointing to the left) represent a flow of inputs from the upstream (supplying industries) to SSA. Forward linkages (signalled by arrows pointing to the right) represent a flow of inputs from SSA to industries using these in their production processes. Calculating the economic contribution of an entity, sector or industry relies on analysing its backward linkages within the economy, to capture the **value add** of its operations. In other words, in the case of SSA, the economic contribution measures how SSA's operations contribute to economic growth, fiscal revenue, employment (amongst other economic variables) by the procurement of inputs, and by the transformation of these inputs into products of higher value. Value added by downstream customers of SSA, via their purchases of SSA output as inputs to their own operations and production processes, is the economic contribution of these customers.

22. Next, we consider SSA's economic contribution to the South African economy.

3 SSA's Contribution to the South African Economy

23. The methodology according to which we quantify SSA's contribution to the South African economy is included in the Appendix A in Section 8.1. This section presents the results of our assessment of the economic contribution of SSA to the South African economy. We consider the backward linkages of SSA and measure the value addition generated by SSA's activities throughout its upstream value chain. We present SSA's overall contribution to main economic indicators including GDP, employment, labour remuneration and government revenue. In addition, the results are disaggregated into the different business segments of SSA to evaluate the economic contributions of each business segment.

24. A typical economic impact assessment begins with an injection of demand into the economy (initial impact) and estimates the total (economy-wide) impact in the following sequence:

- The ***initial economic impact*** (injection) results from operational and capital expenditures by SSA. It represents SSA's employment numbers, operational and capital expenditure and tax contributions.
- The ***first-round effects*** consider the impact of ongoing spending on and by direct suppliers to SSA (e.g., production, employment and tax revenue stimulated at first-round suppliers).
  - The sum of the initial injection (e.g., the total production/turnover of the industry, the intermediate goods bought, the salaries and wages paid, and the profits generated by SSA) and the impact on its first-round suppliers constitutes the direct impact.
- ***Indirect impact***, also referred to as the "rest of indirect", measures the contribution of SSA's direct suppliers and trade partners who purchase goods and services from their suppliers (i.e., suppliers' suppliers), who in turn remunerate their employees and pay taxes.
- ***Induced effects*** consist of the spending by households of the income they derive from the salaries and wages earned in the first three categories. This spending, in turn, generates further production by industries.

25. When the direct, indirect, and induced effects are summed, we derive the total economic impact. The EIA quantifies the impact demand created by the business, its value chain and the rest of the economy in terms of the following macroeconomic aggregates: Gross Domestic Product ("**GDP**"); household income; fiscal impacts; and employment creation.

3.1 Summary of SSA's upstream economic contribution

26. Table 1 presents a comprehensive summary of the main results of the upstream analysis, broken down by macroeconomic component and SSA's economic contribution, both overall and by business unit. A brief summary of the main results is provided below:

- **GDP:**
  - SSA contributes R71.87 billion to GDP through its initial economic impact resulting from its operational and capital expenditures across all business units. Overall, SSA contributes R299.53 billion to GDP via its direct, indirect and induced effects across its upstream value chain.

- **Employment:**
  - SSA supports 24,841 jobs through its initial employment impact resulting from its operations and activities across its business units. Overall, SSA supports a total of 452,683 jobs in the South African economy via its direct, indirect and induced effects throughout its upstream value chain.
- **Labour remuneration:**
  - SSA contributes R17.81 billion to labour remuneration through its initial impact resulting from employment throughout its operations. Overall, SSA supports a total of R94.18 billion in labour renumeration in the form of salaries and wages generated through employment via its direct, indirect and induced impacts along its upstream value chain.
- **Government revenue:**
  - SSA's contributes R23.11 billion to government tax revenue through its initial impact resulting from its operations and activities across its business units. SSA's total contribution to government revenue is R125.74 billion, representing the total tax revenue generated by SSA's direct activities and along its upstream value chain via its direct, indirect and induced economic impacts.

27. The remainder of this section provides a detailed discussion of SSA's contribution in terms of the main macroeconomic variables of the South African economy. We show results both at the aggregate level for SSA in its entirety, as well as in terms of the respective contributions of SSA's various business units.

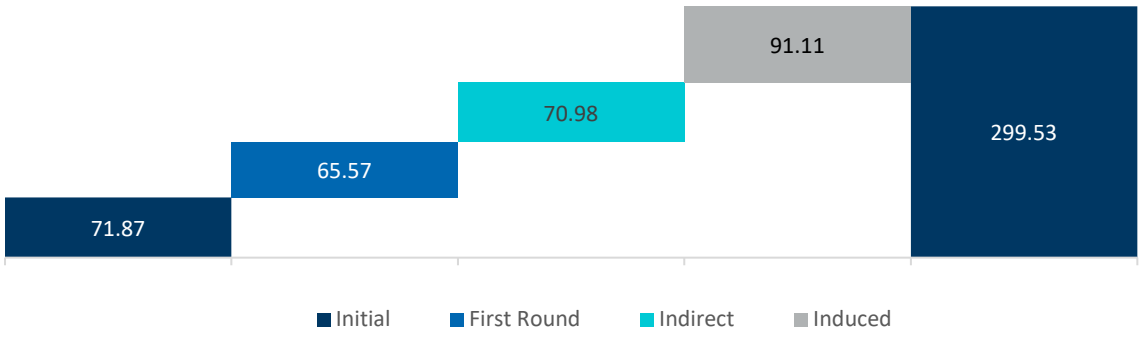
Table 1: Summary of SSA's upstream economic contribution

	Impact	Group Services	Mining	Synthetic Fuels	Chemicals	Oil	Natref	Gas	ROMPCO	Total SSA
GDP (R'bn)	*Initial (SSA)*	R 3.18	R 17.52	R 19.19	R 9.65	R 7.86	R 1.99	R 9.09	R 3.39	R 71.87
	First Round	R 1.08	R 5.09	R 14.82	R 21.00	R 16.39	R 1.46	R 5.48	R 0.25	R 65.57
	Indirect	R 0.26	R 3.47	R 15.26	R 24.09	R 23.27	R 1.26	R 3.28	R 0.08	R 70.98
	Induced	R 3.06	R 12.54	R 22.87	R 27.14	R 15.89	R 2.27	R 6.05	R 1.30	R 91.11
	Total	**R 7.58**	**R 38.62**	**R 72.14**	**R 81.88**	**R 63.41**	**R 6.98**	**R 23.90**	**R 5.02**	**R 299.53**
	% of National Total	**0.12%**	**0.62%**	**1.16%**	**1.32%**	**1.02%**	**0.11%**	**0.39%**	**0.08%**	**4.84%**
Employment (number)	*Initial (SSA)*	4,440	8,006	5,617	5,113	786	614	254	11	24,841
	First Round	350	4,718	18,044	38,426	6,897	3,093	1,261	67	72,856
	Indirect	571	7,481	34,370	54,043	42,389	2,717	6,297	185	148,054
	Induced	6,945	28,480	51,934	61,646	36,091	5,153	13,736	2,947	206,932
	Total	**12,307**	**48,685**	**109,965**	**159,228**	**86,163**	**11,577**	**21,548**	**3,210**	**452,683**
	% of National Total	**0.08%**	**0.33%**	**0.75%**	**1.08%**	**0.58%**	**0.08%**	**0.15%**	**0.02%**	**3.07%**
Labour remuneration (R'bn)	*Initial (SSA)*	R2.90	R4.84	R4.07	R4.46	R0.76	R0.49	R 0.28	R 0.02	R 17.81
	First Round	R0.07	R1.06	R3.41	R6.68	R1.55	R0.50	R 0.93	R 0.02	R 14.23
	Indirect	R0.11	R1.39	R6.23	R9.37	R7.95	R0.50	R 1.16	R 0.03	R 26.73
	Induced	R1.18	R4.83	R8.82	R10.49	R6.39	R0.87	R 2.33	R 0.50	R 35.42
	Total	**R4.26**	**R12.11**	**R22.52**	**R31.0**	**R16.66**	**R2.37**	**R 4.69**	**R 0.57**	**R 94.18**
	% of National Total	**0.15%**	**0.42%**	**0.79%**	**1.08%**	**0.58%**	**0.08%**	**0.16%**	**0.02%**	**3.29%**
Government revenue (R'bn)	*Initial (SSA)*	R 0.92	R 3.15	R 4.74	R 4.47	R 4.72	R 0.54	R 4.20	R 0.38	R 23.11
	First Round	R 1.49	R 10.28	R 19.27	R 21.02	R 20.44	R 1.85	R 6.39	R 1.63	R 82.38
	Indirect	R 0.03	R 0.42	R 1.81	R 2.82	R 3.16	R 0.15	R 0.41	R 0.01	R 8.81
	Induced	R 0.38	R 1.57	R 2.87	R 3.41	R 1.99	R 0.28	R 0.76	R 0.16	R 11.43
	Total	**R 2.83**	**R 15.43**	**R 28.69**	**R 31.72**	**R 30.31**	**R 2.82**	**R 11.76**	**R 2.18**	**R 125.74**
	% of National Total	**0.23%**	**1.23%**	**2.30%**	**2.54%**	**2.43%**	**0.23%**	**0.94%**	**0.17%**	**10.06%**

3.2 Detailed results for SSA

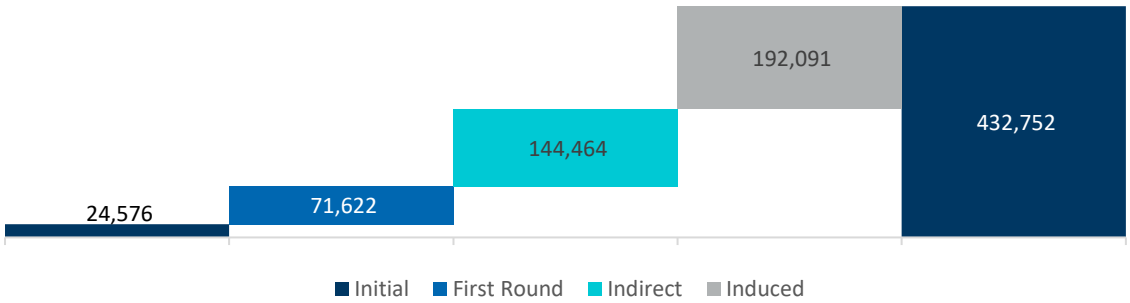
28. SSA contributes R71.87 billion to South Africa's GDP through its initial economic impact resulting from its operational and capital expenditures across all business units. SSA's first-round economic effects, which includes ongoing spending on and by direct suppliers to SSA adds a further R65.57 billion to GDP. SSA's initial economic impact and first-round effects therefore constitute a direct contribution of R137.44 billion to GDP. SSA's activities indirectly supports a further R70.98 billion arising from operations and activities at suppliers of direct suppliers to SSA, while an additional R91.11 billion is added to GDP via induced effects resulting from the spending of wages and salaries generated throughout SSA's upstream value chain. Overall, SSA's total contribution to GDP is R299.53 billion.

Figure 2: SSA's contribution to GDP (R'bn), 2021



29. SSA supports 24,576 jobs through its initial employment impact resulting from its operations and activities across its business units. SSA's first-round employment effects, which includes employment amongst direct suppliers to SSA supports a further 71,622 jobs. SSA's initial employment impact and first-round effects therefore constitute a direct employment contribution of 96,198 jobs. SSA's activities indirectly supports a further 144,464 jobs amongst suppliers to direct suppliers to SSA, while an additional 192,091 jobs are supported via SSA's induced effects along its upstream value chain. Overall, SSA supports a total of 432,752 jobs throughout the economy via its direct, indirect and induced effects.

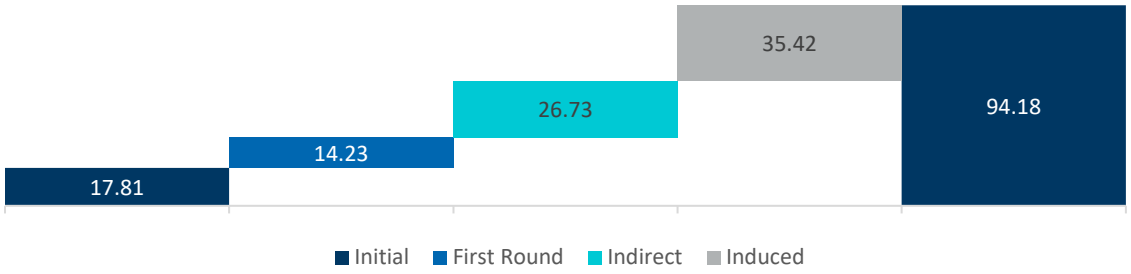
Figure 3: SSA contribution to employment (no. of jobs), 2021



30. SSA contributes R17.81 billion to labour remuneration through its initial impact resulting from employment throughout its operations. SSA's first-round effects, which includes wages and salaries derived from employment amongst direct suppliers to SSA adds a further R14.23 billion to labour

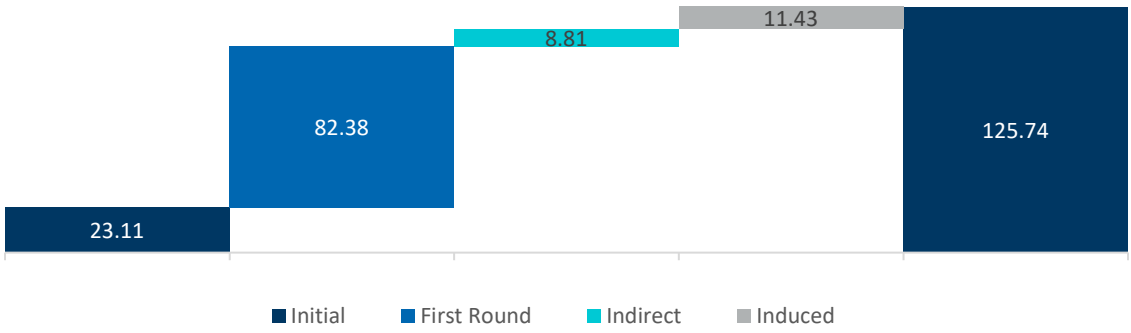
remuneration. SSA's initial impact and first-round effects therefore constitute a direct contribution of R32.04 billion to labour remuneration. SSA's activities indirectly supports a further R26.73 billion in labour remuneration derived from employment amongst suppliers of direct suppliers to SSA, while an additional R35.42 billion is supported via SSA's induced effects along its upstream value chain. Overall, SSA's total contribution to labour remuneration is R94.18 billion.

Figure 4: SSA contribution to labour renumeration (R'bn), 2021



31. SSA's contributes R23.11 billion to government tax revenue through its initial impact resulting from its operations and activities across its business units. SSA's first-round effects, which includes tax revenues generated by the activities of direct suppliers to SSA adds a further R82.38 billion in tax revenues. SSA's initial impact and first-round effects therefore constitute a direct contribution of R105.49 billion to government revenue. SSA's activities indirectly supports a further R8.81 billion in tax revenues arising from operations and activities at suppliers of direct suppliers to SSA, while an additional R11.43 billion in tax revenues is added via induced effects along SSA's upstream value chain. Overall, SSA's total contribution to government revenue is R125.72 billion. The following subsections consider the respective economic contributions of SSA's business units.

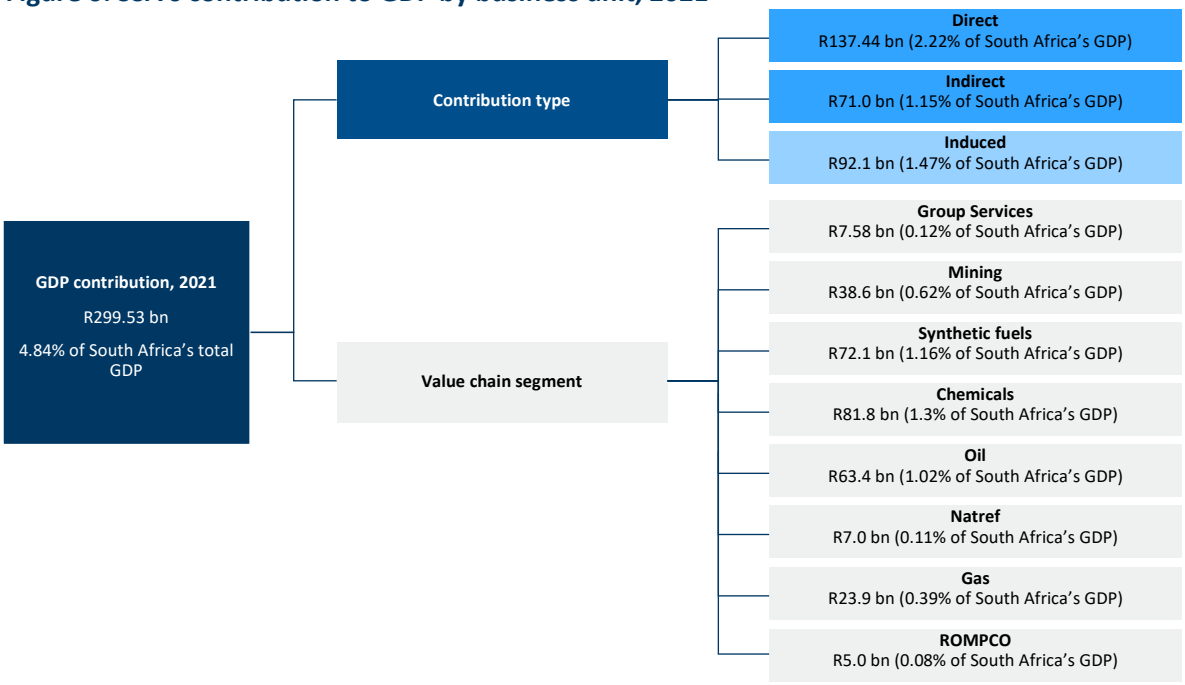
Figure 5: SSA 's contribution to government revenue (R'bn), 2021



3.3 Detailed results for SSA's business units

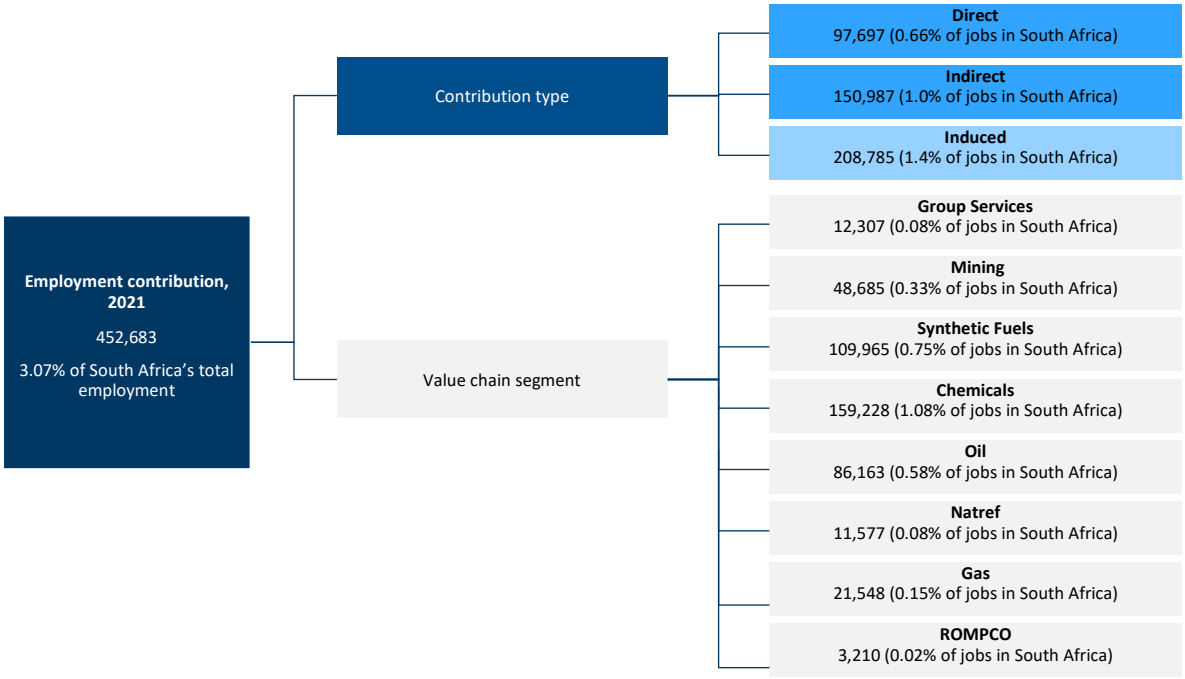
32. Figure 6 below illustrates the respective upstream contributions by SSA's business units to GDP. Overall, through its direct, indirect, and induced activities SSA contributes R299.53 billion (4.84% of GDP) to South Africa's economy. In terms of the relative sizes of SSA's respective business units' economic contributions, the Oil (R63.41 billion), Chemicals (R81.88 billion), Synthetic Fuels (R72.14 billion) and Mining (R38.62 billion) business units constitute the largest value shares, while Gas (R23.90 billion), Group Services (R7.58 billion), Natref (R6.98 billion) and ROMPCO (R5.02 billion) constitute relatively smaller shares within SSA's overall contribution to GDP.

Figure 6: SSA's contribution to GDP by business unit, 2021



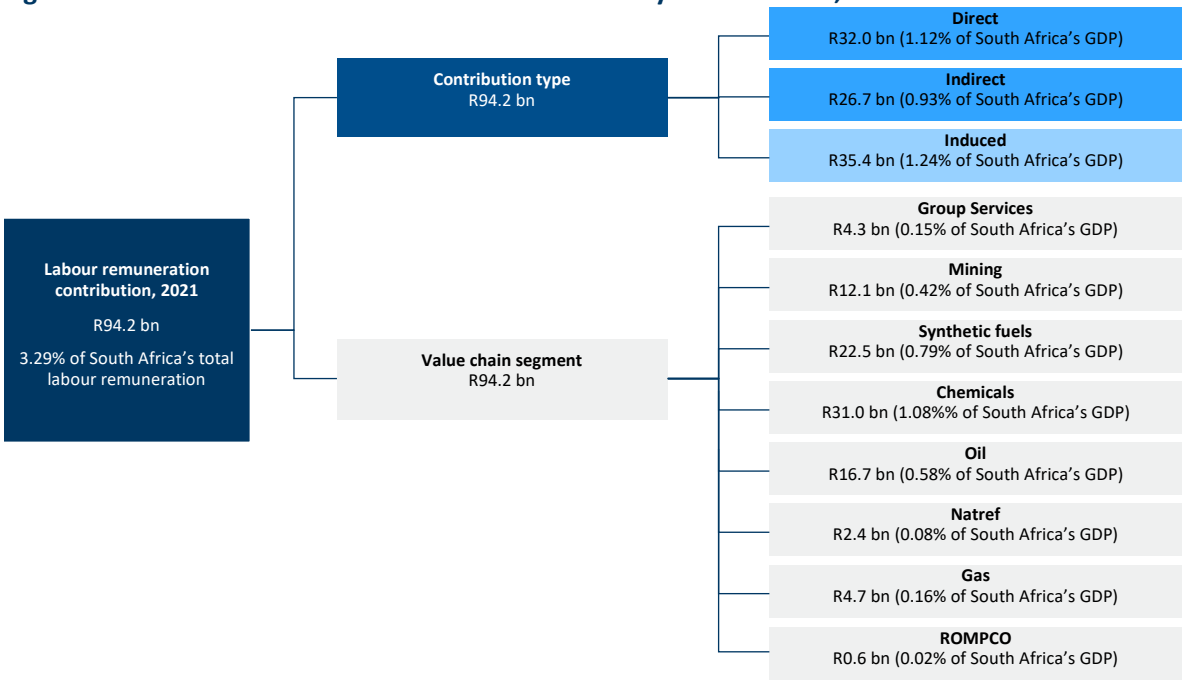
33. SSA supports a total of 452,683 jobs throughout the economy via its direct, indirect and induced activities (see Figure 7 below). In terms of the breakdown of SSA's total employment contribution by business unit, the Chemicals (159,228 jobs), Synthetic Fuels (109,965 jobs) and Oil (86,163 jobs) segments constitute the largest respective shares, while Mining (48,685 jobs), Gas (21,548), Group Services (12,307 jobs), Natref (11,577 jobs) and ROMPCO (3,210) also comprise significant albeit smaller contributions to employment.

Figure 7: SSA's contribution to employment by business unit, 2021



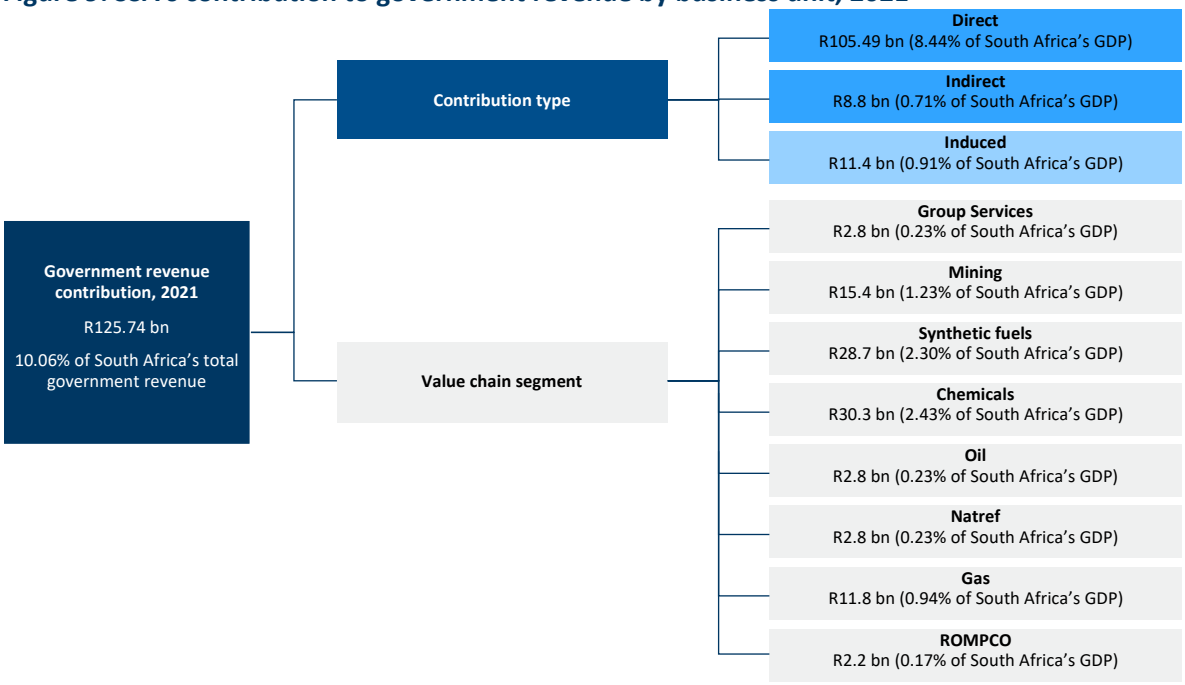
34. SSA's total contribution to labour remuneration via its direct, indirect and induced activities is R94.18 billion. In terms of the breakdown of SSA's total remuneration contribution by business unit, the Synthetic Fuels (R22.52 billion), Chemicals (R31.00 billion) and Oil (R16.66 billion) segments constitute the largest respective shares, while Mining (R12.11 billion), Gas (R4.69 billion), Group Services (R4.26 billion), Natref (R2.37 billion) and ROMPCO (R0.57 billion) comprise the remainder of SSA's total contribution to labour remuneration.

Figure 8: SSA's contribution to labour remuneration by business unit, 2021



35. SSA's total contribution to government revenue via its direct, indirect and induced activities is R125.74 billion. In terms of the breakdown of SSA's total government revenue contribution by business unit, the Oil (R30.31 billion), Chemicals (R31.72 billion) and Synthetic Fuels (R28.69 billion) segments constitute the largest respective shares, while Mining (R15.43 billion), Gas (R11.76 billion), Group Services (R2.83 billion), Natref (R2.82 billion) and ROMPCO (R2.18 billion) comprise smaller proportions of SSA's total contribution to government revenue.

Figure 9: SSA's contribution to government revenue by business unit, 2021



36. Overall, SSA generates considerable economic value through both its direct activities and backward linkages at the upstream level. Consequently, the economic value lost due to a potential shutdown of Secunda operations may have substantial adverse impacts for the South African economy.

37. We turn now to the economic contribution of SSA within the local municipalities in which they operate. This is an important consideration, given that SSA operations play a pivotal role in supporting, and in some instances, sustaining economic activities within their areas of operation.

4 SSA's Economic Contribution to Local Municipalities

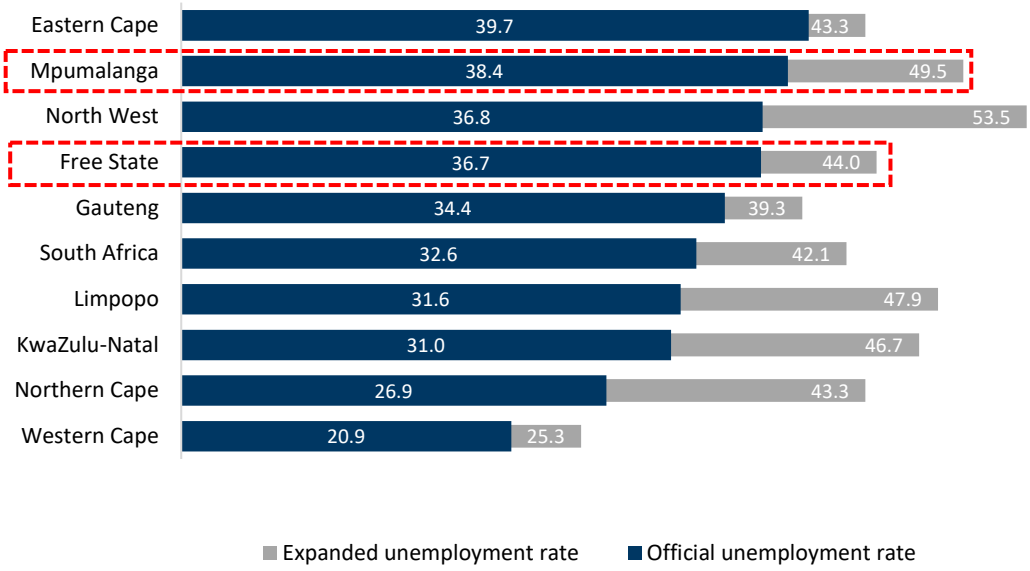
38. In analysing the regional economic contribution to SSA's operations, we provide a high-level overview of the provincial reality in which these economic contributions take place.

4.1 Provincial economic context

39. SSA's Secunda operations take place in the Govan Mbeki Local Municipality, which belongs to the province of Mpumalanga. Following the Covid-19 pandemic, unemployment levels remain stubbornly high. Figure 10 shows that the province has the second highest unemployment rate (narrowly defined) of all provinces at 38.4% (Eastern Cape = 39.7%), and only lags North West according to the expanded (broad) definition of employment (including discouraged work-seekers). Indeed, Mpumalanga's unemployment rate reaches almost 50% under the expanded definition.

40. Moreover, SSA's Sasolburg operations are in the Free State, which also shows concerningly high unemployment levels (official = 36.7% and expanded = 44%), relative to the already high unemployment rates in the other provinces.

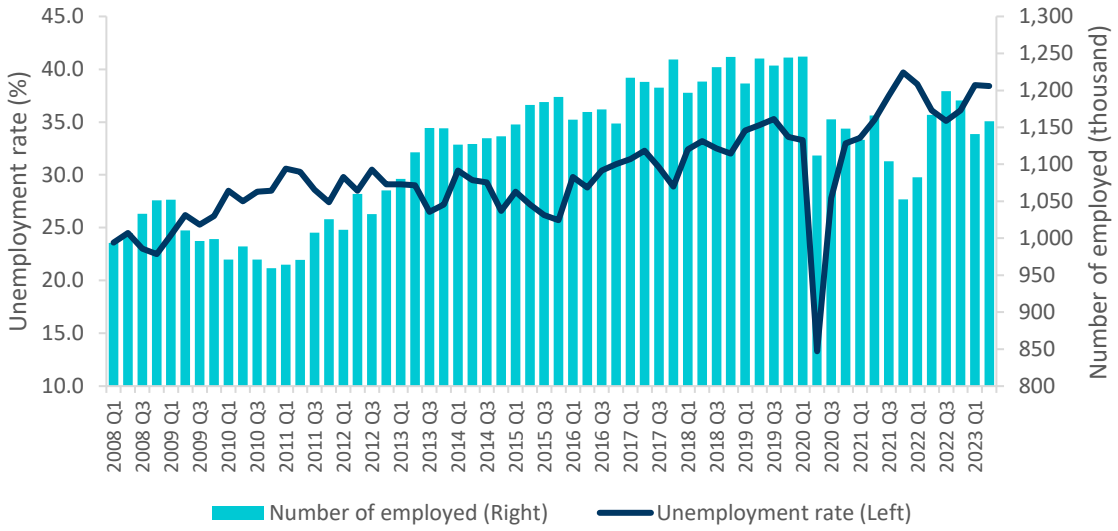
Figure 10: Official and expanded unemployment rate (%) per province (2023 Q2)



Source: Quarterly Labour Force Survey (2023 Q2)

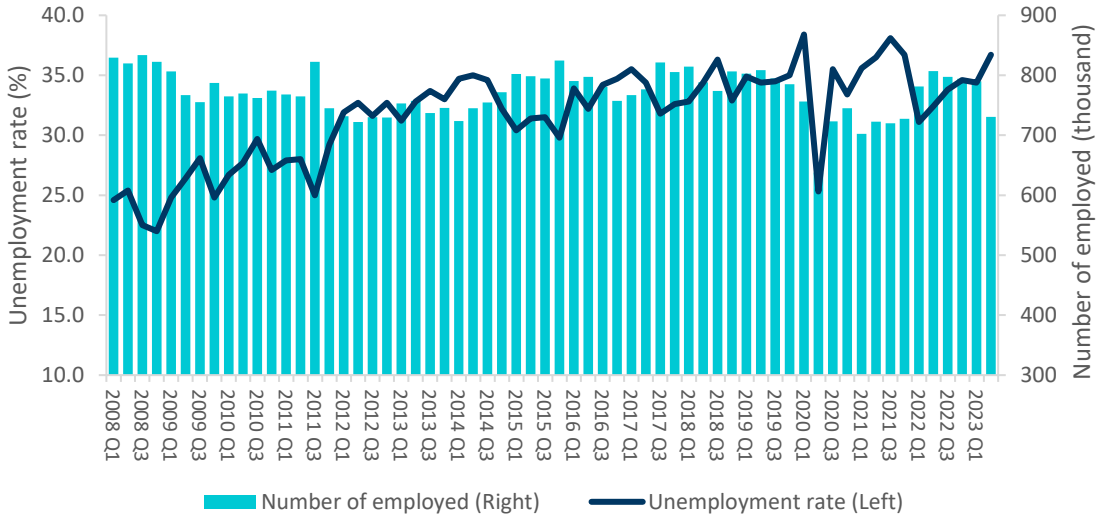
41. Figure 11 illustrates that unemployment remains above levels observed prior to the Covid-19 pandemic, and the number of people employed within Mpumalanga is below pre-Covid-19 levels (approximately 87,000 fewer people were employed in 2023Q2 than in 2020Q1), despite some recovery during 2021 and 2022. This trend is also true for the Free State, illustrated in Figure 12 where there are approximately 26,000 fewer people employed in 2023Q2 than 2020Q1. The Free State, and even more so, Mpumalanga, are therefore in a precarious position in terms of employment.

Figure 11: Unemployment rate and employment in Mpumalanga (2008Q1 - 2023Q2)



Source: Quarterly Labour Force Survey (2023 Q2)

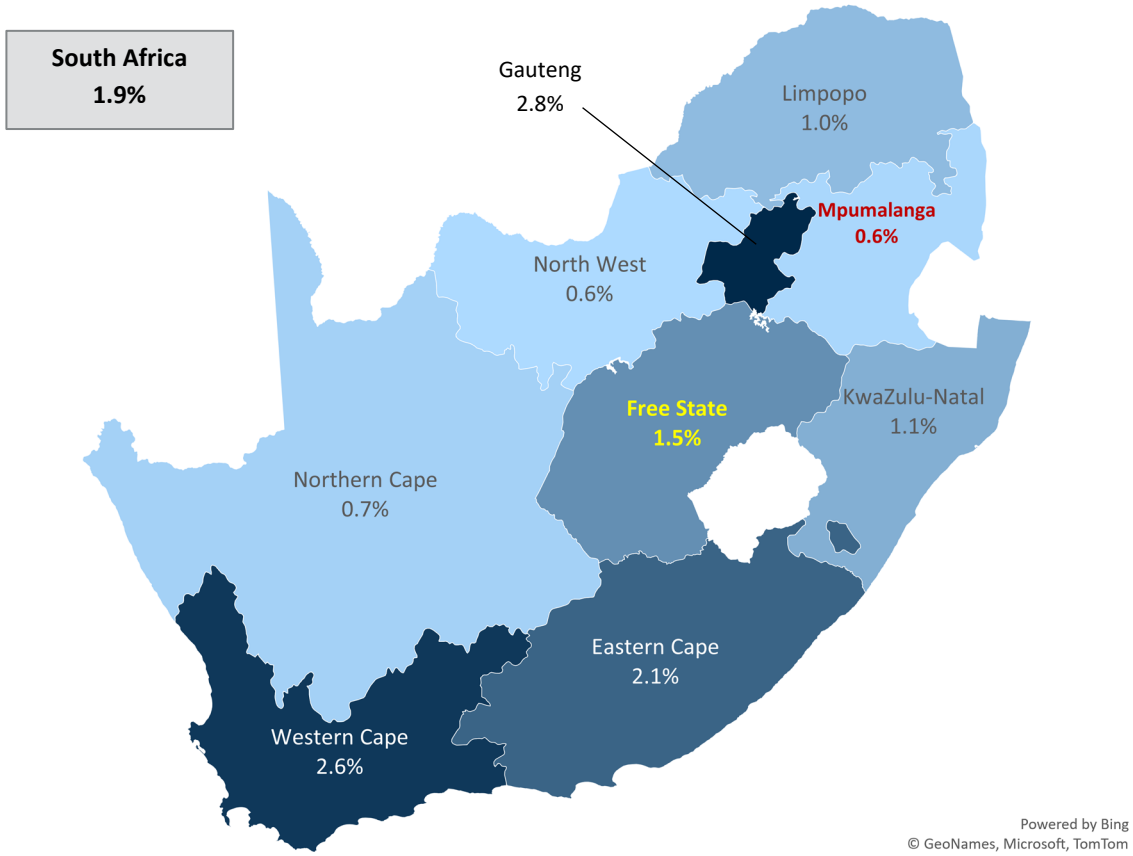
Figure 12: Unemployment rate and employment in the Free State (2008Q1 - 2023Q2)



Source: Quarterly Labour Force Survey (2023 Q2)

42. Figure 13 shows GDP growth across provinces between 2021 and 2022. Mpumalanga's GDP grew just 0.6% in real terms over this period. Along with North West, this was the lowest level of economic growth amongst South Africa's provinces. This was well below the national GDP growth rate of 1.9% over the same period. Free State's GDP growth was 1.5%, which is notably below the national average.

Figure 13: Real GDP growth per province (2021-2022) per annum



Source: Stats SA (Provincial GDP: Experimental estimates, 2013-22 (Constant 2015 prices))

43. Mpumalanga therefore currently faces significant economic constraints. Against this backdrop, we consider the contribution of SSA to the Govan Mbeki and Metsimaholo local municipalities. In the following section, we discuss the methodology used to calculate estimates of the localised impact of SSA operations.

44. While Section 3 considered SSA's contribution to the South African economy at the national level, SSA is also a significant contributor to the local economies of the areas and communities which host its operations. In the same way that we quantified the impact of SSA on the South African economy, we analyse the contribution of SSA to the Govan Mbeki local municipality ("**LM**") and the Metsimaholo LM. The methodology used to calculate SSA's contribution to these LMs is shown in Appendix B in Section 8.2.

4.2 SSA's contribution to the Govan Mbeki local municipality

45. Table 2 presents summary of the main results of the analysis, broken down by macroeconomic component and SSA's economic contribution:

- **GDP**:
  - SSA contributes R18.08 billion to GDP through its initial economic impact with the Govan Mbeki LM. Overall, SSA contributes R57.19 billion to GDP via its direct, indirect and induced effects across its upstream value chain within the municipality.
- **Employment**:

- SSA supports 6,864 jobs through its initial employment impact resulting from its operations and activities within the municipality. Overall, SSA supports a total of 56,837 jobs in the local region via its direct, indirect and induced effects via its upstream value chain.

- **Labour remuneration:**
  - SSA contributes R4.93 billion to labour remuneration through its initial impact resulting from employment within its operations in the local municipality. Overall, SSA supports a total of R16.26 billion in labour renumeration in the form of salaries and wages generated through employment via its direct, indirect and induced impacts within Govan Mbeki LM.

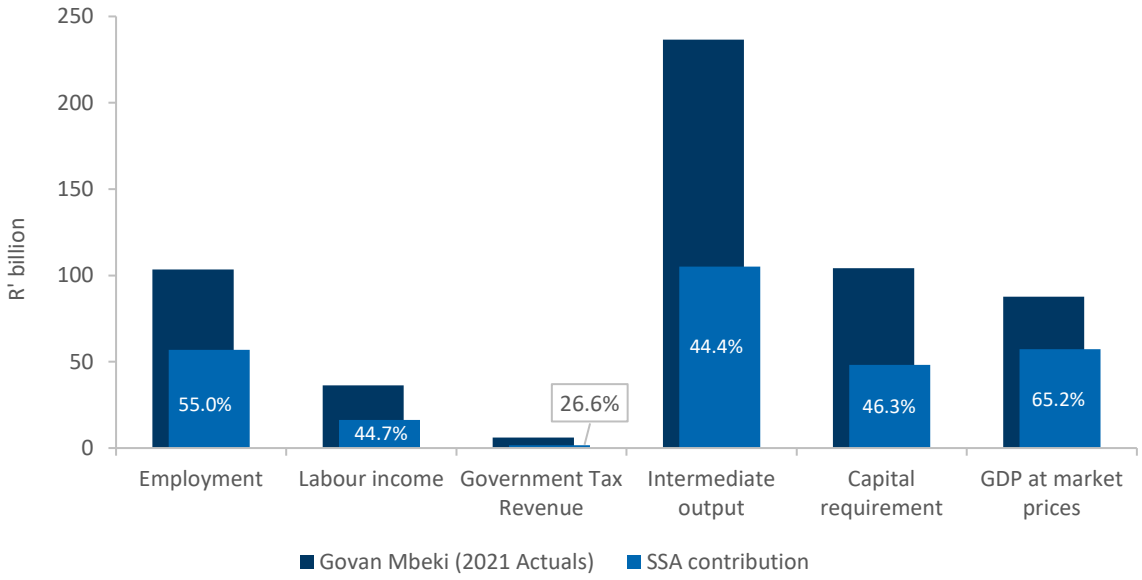
- **Government revenue:**
  - SSA directly contributes R0.14 billion to local government tax revenue through production or activity taxes. In total, SSA's contribution to these tax categories amounts to R1.60 billion, encompassing the tax revenue generated by SSA's direct activities and its economic impacts along its upstream value chain within the local municipality, including direct, indirect, and induced effects.

Table 2: Summary of SSA's upstream economic contribution to the Govan Mbeki LM

Economic indicator	SSA Initial impact	First-round effects	Indirect impact	Induced effects	SSA Total contribution	SSA share of LM total (%)
Value Added (GDP) at market prices (R'bn)	**18.08**	16.58	6.64	15.89	**57.19**	**65.2%**
Employment (Number)	**6,864**	9,989	12,434	27,551	**56,837**	**55.0%**
Labour income (R'bn)	**4.93**	3.46	2.22	5.65	**16.26**	**44.7%**
Government Tax Revenue (R'bn)	**0.14**	0.40	0.30	0.77	**1.60**	**26.6%**
Intermediate output (R'bn)	**50.15**	17.70	13.51	23.75	**105.11**	**44.4%**
Capital requirement (R'bn)	**4.18**	13.09	8.32	22.65	**48.23**	**46.3%**

46. Figure 14 shows SSA's contribution to the Govan Mbeki LM's economy, with SSA's operations contributing close to two-thirds of GDP within the region. Slightly more than half of employment, and slightly less than half of labour remuneration can also be attributed to SSAs, via backward linkages in the upstream value chain, and close to half of the local municipality's capital requirement is attributable to SSA. The contribution to the LM municipality is therefore significant, with SSA playing an important role in generating and supporting economic activity within the region.

Figure 14: SSA's contribution to the Govan Mbeki local economy (%)



Note: Employment total is shown as number of jobs

47. SSA's contribution the local economy is significant. However, the overall values shown above mask substantial contributions at a sector level. Table 6 in the Appendix shows SSA's contribution by sector. In terms of GDP, SSA's contribution is more than 75% of GDP in several sectors: Manufacturing (87.8%), Transport, Storage and Communication (81.8%), Electricity, Gas and Water (75.8%) and Agriculture, Forestry and Fishing (88.7%). In terms of employment, SSA contributes more than 70% in Finance, Real Estate and Business (97.0%), Manufacturing (71.5%), Agriculture, Forestry and Fishing (93.3%), and Transport, Storage and Communication (88.1%). SSA also contributes 66.7% towards employment within the Electricity, Gas and Water sector.

48. Against a backdrop of some of the highest levels of unemployment in South Africa and in Mpumalanga, and the lowest GDP growth on a provincial level, the contribution of SSA's operations within the local municipality and the province are important, and the consequences of a shutdown of SSA's operations at Secunda are likely to be significant.

4.3 SSA's contribution to the Metsimaholo local municipality

49. Table 3 presents a comprehensive summary of the main results of the analysis, broken down by macroeconomic component and SSA's economic contribution:

- **GDP**:
  - SSA contributes R10.77 billion to GDP through its initial economic impact with the Metsimaholo LM. Overall, SSA contributes R33.09 billion to GDP via its direct, indirect and induced effects across its upstream value chain within the municipality.
- **Employment**:
  - SSA supports 3,024 jobs through its initial employment impact resulting from its operations and activities within the municipality. Overall, SSA supports a total of 33,538 jobs in the local region via its direct, indirect and induced effects via its upstream value chain.
- **Labour remuneration**:

- SSA contributes R2.42 billion to labour remuneration through its initial impact resulting from employment within its operations in the local municipality. Overall, SSA supports a total of R9.07 billion in labour renumeration in the form of salaries and wages generated through employment via its direct, indirect and induced impacts within Metsimaholo LM.

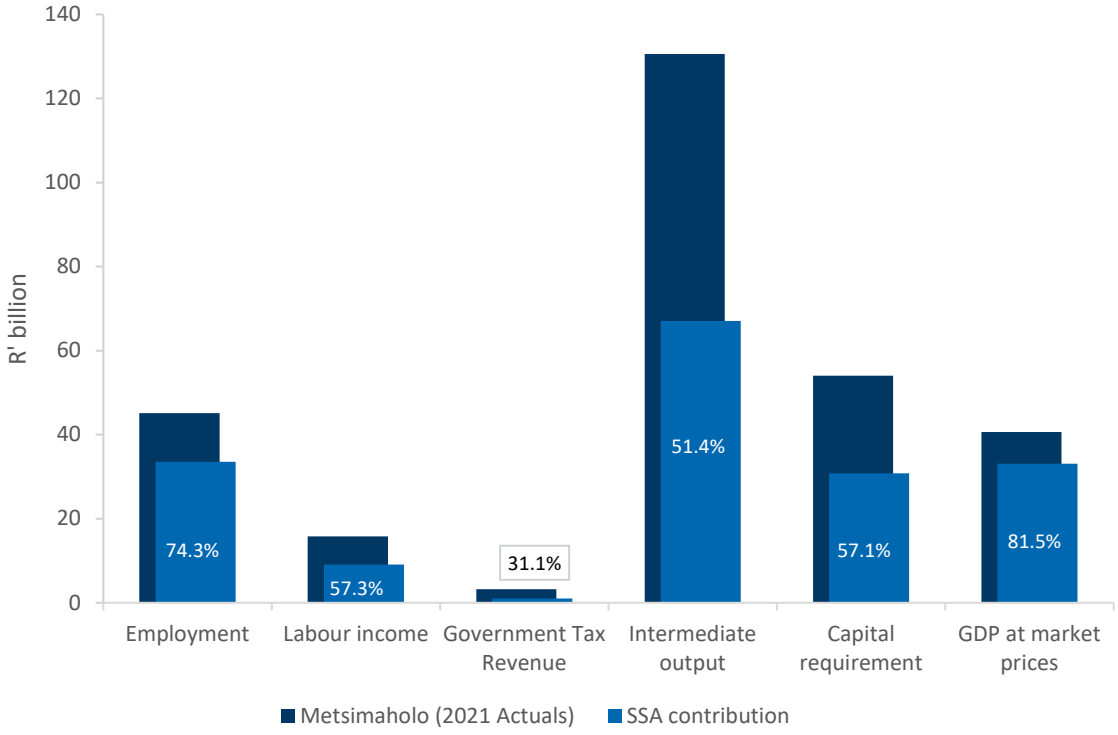
- **Government revenue:**
  - SSA directly contributes R0.08 billion to local government tax revenue through production or activity taxes. In total, SSA's contribution to these tax categories amounts to R1.01 billion, encompassing the tax revenue generated by SSA's direct activities and its economic impacts along its upstream value chain within the local municipality, including direct, indirect, and induced effects.

Table 3: Summary of SSA's upstream economic contribution to the Metsimaholo LM

Economic indicator	SSA Initial impact	First-round effects	Indirect impact	Induced effects	SSA Total contribution	SSA share of LM total (%)
Value Added (GDP) at market prices (R'bn)	**10.77**	7.67	5.72	8.92	**33.09**	**81.5%**
Employment (Number)	**3,024**	4,196	10,058	16,261	**33,538**	**74.3%**
Labour income (R'bn)	**2.42**	1.47	2.03	3.15	**9.07**	**57.3%**
Government Tax Revenue (R'bn)	**0.08**	0.22	0.25	0.46	**1.01**	**31.1%**
Intermediate output (R'bn)	**28.83**	11.85	10.80	15.58	**67.07**	**51.4%**
Capital requirement (R'bn)	**3.13**	6.74	7.30	13.67	**30.83**	**57.1%**

50. Figure 15 shows SSA's contribution to the Metsimaholo LM's economy, with SSA's operations contributing more than 80% of GDP within the region. Almost three quarters of employment, and more than half of labour remuneration can also be attributed to SSAs, via backward linkages in the upstream value chain, and more than half of the local municipality's capital requirement is attributable to SSA. The contribution to the LM municipality is therefore significant, with SSA playing an important role in generating and supporting economic activity within the region.

Figure 15: SSA's contribution to the Metsimaholo local economy (%)



Note: Employment total is shown as number of jobs

51. SSA's contribution the local economy is significant. However, the overall values shown above mask substantial contributions at a sector level. Table 6 in the Appendix shows SSA's contribution by sector. In terms of GDP, SSA's contribution is more than 80% of GDP in both Manufacturing (82.9%) and Mining and quarrying (86.5%). In terms of employment, SSA contributes more than 80% in various sectors, such as Manufacturing (88.4%), Trade, catering and accommodation (87.3%), Finance, Real Estate and Business (91.6%), General government services (89%), Mining and quarrying (92.1%), Transport, storage and communication (90.1%). SSA also contributes 88.9% towards employment within the Electricity, Gas and Water sector.

52. This analysis shows a quantitative assessment of SSA's economic contribution both at the national and the local levels which house SSA's operations. However, the model does not fully capture all aspects of SSA's operations and initiatives that generate economic and social impacts outside of its industry value chain. In the Appendix F in Section 8.6, we include an overview of SSA's various social investment initiatives aimed at the socioeconomic support and development of communities and areas in close proximity to its operations ("fence line communities").

5 Key Sector Analysis

53. The economic contribution, measured above, captures the value that arises from SSA's demand for inputs from its supplying sectors via backwards linkages. However, SSA also supports substantial economic value creation by meeting demand for inputs and products in other downstream sectors. Many industries rely on SSA for crucial inputs into their production processes, and in some cases, SSA is the sole local producer of those inputs. These sectors are vulnerable if SSA's operations become jeopardised.

54. While alternative sources, such as imports, may fulfil some demand for SSA's products in the medium- to long-term, in the short-term many industries face severe supply constraints, such as logistical and capacity constraints and substantially higher import prices. For example, South Africa's gold mining industry depends on liquid cyanide for the extraction of precious metals. As the only supplier of liquid cyanide in South Africa, SSA's production and sales to the gold mining industry are crucial to the industry.[5] In instances where the importation of substitute products is either infeasible or impossible, industries relying on key inputs from SSA may face an existential threat.

55. Having considered the economic contribution of SSA to the national and local economies within which it operates, this section analyses the extent of SSA's integration, or interdependence, with other sectors within the South African economy. The key sector analysis identifies economic activities with the strongest interdependence with the rest of the economy. This is measured by backward and forward linkages. In Section 2, we explained that backward linkages are the dependence of an economic activity on inputs produced from other activities, and forward linkages are an economic sector's role in supplying inputs to other sectors.[6]

56. The purpose of this key sector analysis is to situate SSA within the South African economy and to understand the extent of interdependence between SSA and other sectors. Sectors with a high degree of interdependence upstream (via backward linkages) and downstream (via forward linkages) represent key sectors that play an essential role in economic activity and economic development.

5.1 Methodology for the key sector analysis

57. The key sector analysis relies on the 2021 SAM (described in the Appendix). The SAM captures the flows of transactions through the economy, capturing the expenditure by one sector on goods and services produced in another sector. This allows us to determine backward and forward linkages within the economy and to calculate, for each sector, what share of expenditure is spent on inputs from a specific upstream (supplying) sector.

58. With this information, we calculate average backward and forward multipliers for each sector. The average backward multiplier for a sector is its expenditure on inputs from all other sectors. It captures the extent of the sector's reliance on inputs from other sectors to conduct operations and to produce outputs. In the case of SSA, the backward multiplier captures the extent to which SSA relies on inputs from supplying sectors to run its operations and produce output. It shows the extent

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5 Competition Tribunal of South Africa. (2023). *Tribunal prohibits Sasol's sale of sodium cyanide business to Draslovka.* Available: https://www.comptrib.co.za/info-library/case-press-releases/tribunal-prohibits-sasols-sale-of-sodium-cyanide-business-to-draslovka [Accessed: 12 October 2023]

6 Humavindu and Stage. (2013). Key Sectors in the Namibian Economy. *Journal of Economic Structures.* (2)1.

to which SSA provides a market for goods produced in other upstream sectors.

59. The average forward multiplier for a sector is the expenditure by other sectors on procuring inputs from that sector. It shows the extent to which enterprises in other sectors rely on a sector for inputs into their production processes. In the case of SSA, the forward multiplier captures the extent to which other sectors rely on inputs from SSA (i.e., SSA's outputs/products) in their production processes. In this sense, SSA meets the demand for its products which, in some cases, form key inputs into production in downstream industries. As mentioned above, in some instances SSA is the only producer of key inputs, leaving some economic activities entirely dependent on SSA for inputs and ultimately for production.

60. The backward linkage ("**BL**") indicator for a given sector reflects the effect of a change in its final demand on the economy's total production, whereas the forward linkage ("**FL**") indicator reflects the effect of a change in the final demand of all sectors of the economy on its production.[7] The backward and forward linkage indicators are used to understand the relative importance of different sectors or entities within the South African economy by examining the strength of their linkages to other sectors.

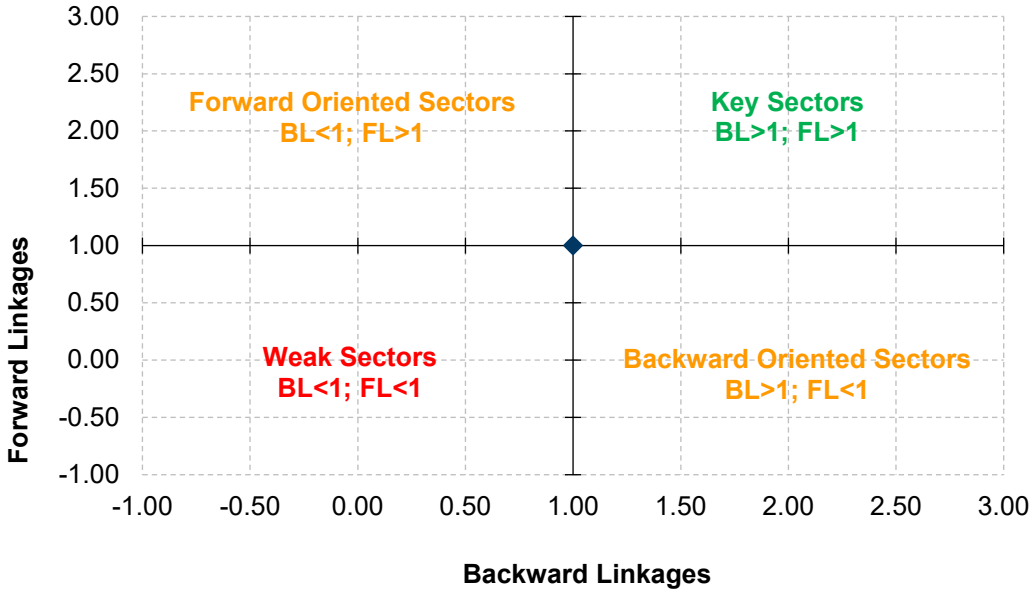
61. We compare the relative strength of these linkages between sectors or entities. In other words, to evaluate the interdependence of sectors, we analyse the backward and forward multipliers for each sector relative to those of other sectors. To this end, we express average backward and forward multipliers as "normalised" relative to the overall multipliers for the economy (which are set equal to one). Sectors with strong linkages will have normalised backward or forward multipliers greater than one. An indicator value above indicates that a sector draws more than average from the economic system, while a value below one means the sector draws less than average. Higher indicator values represent sectors with larger effects on the demand for domestic production and larger impacts on the economy.[8]

62. This makes it possible to categorise a sector in relation to the intensity and nature of its inter-linkages with the rest of the economy. Figure 16 illustrates how the BL and FL metrics can be categorised. A sector is forward-oriented if its forward multiplier is greater than the average size of forward multipliers across all sectors of the economy (top left quadrant where FL > 1 and BL < 1).A sector is backward-oriented if its backward multiplier is greater than the average size of backward multipliers across all sectors (bottom right quadrant where BL > 1 and FL < 1). A "key sector" is simultaneously backward- and forward-oriented (top right quadrant where BL > and FL > 1). Key sectors have the strongest interlinkages across the economy. Finally, a weak sector exhibits relatively weak interlinkages with the rest of the economy (bottom left quadrant where BL < 1 and FL < 1).

7 Khanal, B. R., Gan, C. and Becken, S. 2014. Tourism inter-industry linkages in the Lao PDR economy: an input-output analysis. *Tourism Economics*, 20(1): 171-194.

8 Cai, J., and Leung, P. S. 2004. Linkage measures: a revisit and a suggested alternative. *Economic System Research*, 16(1): 65-85.

Figure 16: Categorisation of backward and forward linkages



5.2 Inter-industry linkages for SSA in the South African SAM

63. Figure 17 categorises the weighted backward and forward linkages of the various sectors in the South African economy in 2021. The detailed results for all of the sectors are summarised in Table 7 in Appendix D.

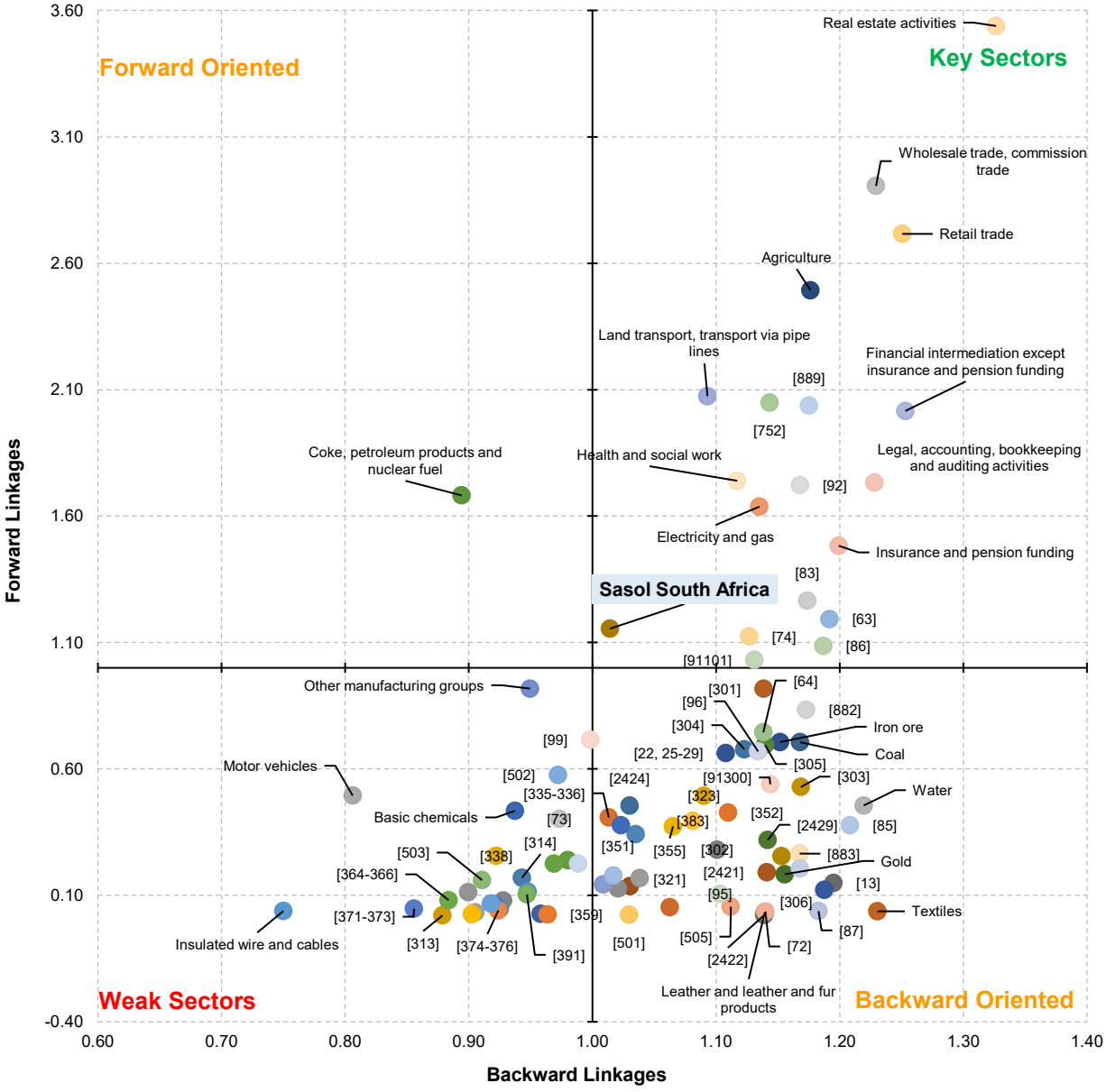
64. The results show that most of the sectors lie in the bottom right quadrant, indicating that they are backwards orientated sectors. These tend to be primary industries that utilise natural resources, including *Iron Ore*, *Coal*, *Water*, *Textiles*, and *Gold*. The second largest grouping is in the bottom left quadrant, indicating relatively weak interlinkages with the rest of the economy. Examples of these sectors include *Motor Vehicles*, *Building of Complete Constructions* and *Basic Chemicals*. Only *Coke, Petroleum Products and Nuclear Fuel* is classified as forward orientated in the top left quadrant.

65. Sectors in the top right quadrant are classified as key sectors exhibiting strong forward and backward linkages. Examples of these sectors include *Real Estate Activities*, *Wholesale Trade*, *Retail Trade*, *Agriculture*, and *Financial Intermediation*. *Wholesale Trade*, for instance, exhibits a weighted backward linkage of 1.23. This signifies that an increase in demand for wholesale trade significantly influences the production of other sectors of the economy. This sector is likely heavily dependent on inputs from other sectors, likely for inventory and distribution purposes. *Real Estate Activities*, for instance, exhibit a weighted forward linkage of 3.54. This suggests a substantial demand for goods and services from other sectors, including construction materials, legal and financial services, and other requisites for real estate development.

66. According to these results, SSA is classified as a key sector with relatively strong backward and forward linkages. SSA exhibits a weighted backward linkage of 1.01, which indicates that its impact on other sectors that rely on its output is higher than the average across sectors. At the same time, SSA exhibits a weighted forward linkage of 1.15, denoting a demand for goods and services from other sectors that is also higher than the average across sectors. This signifies that SSA both draws from and contributes to the economic system at a level that is above the average across sectors.

67. This implies that SSA is an important driver of economic activity, through both backward and froward linkages with other sectors in the economy. This underscores SSA's significant role in propelling economic activity and production in the local economy, alongside a notable reliance on inputs from and demand for goods and services from other sectors.

Figure 17: Weighted backward and forward linkages in the South African economy in 2021



5.3 Comparing multipliers across sectors

68. Another way of classifying the relative contribution of different sectors is to compare the GDP and employment multipliers between the sectors. Multipliers indicate the degree to which activity in one sector amplifies economic activity overall. By comparing multipliers, we compare, for example, how a Rand of SSA expenditure stimulates GDP and employment within the South African economy, with how a Rand of expenditure in other sector stimulates GDP and employment within the South African economy.

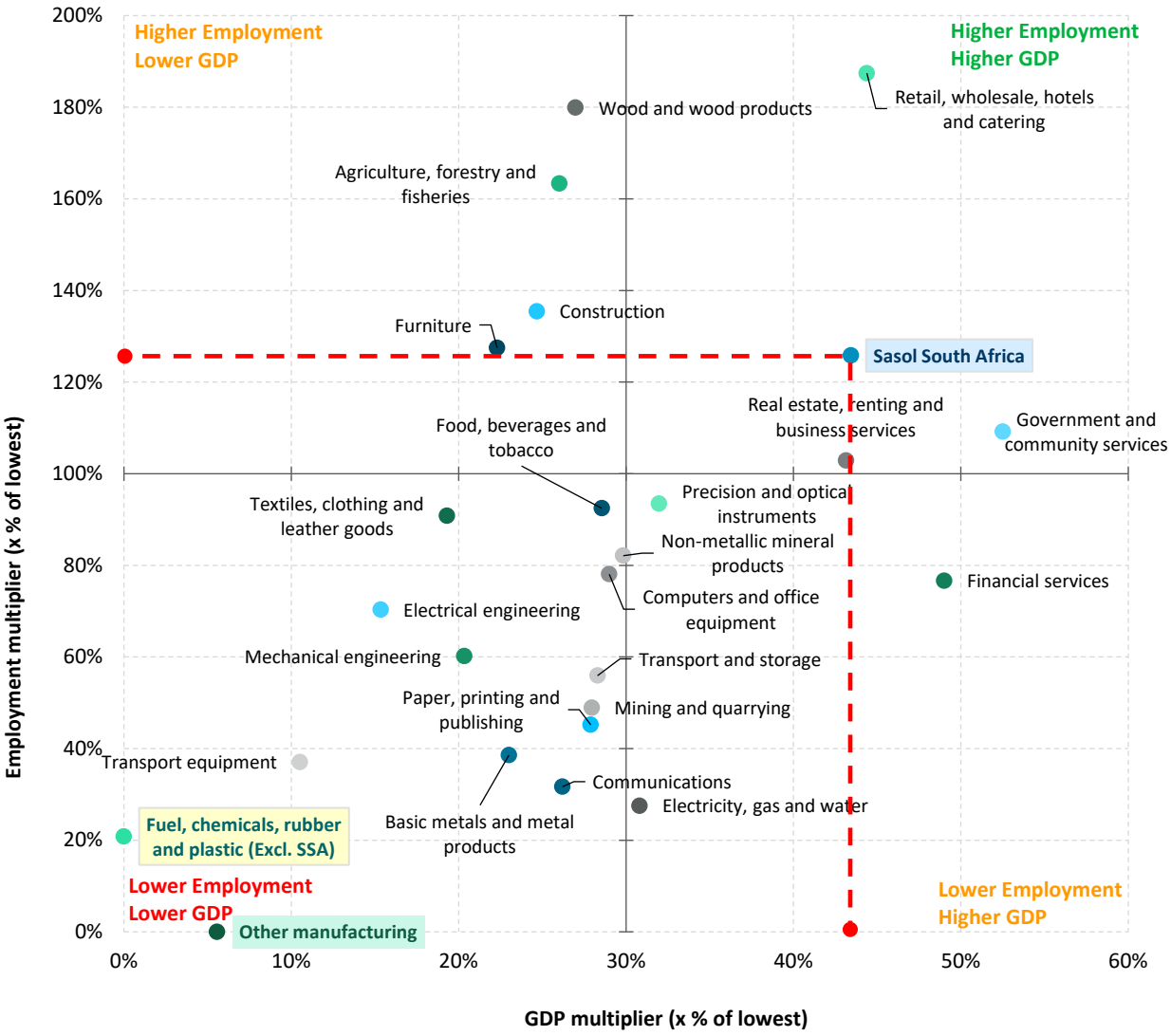
69. Figure 17 illustrates the total GDP and employment multiplier effects for all activities in the South African SAM for 2021. Again, to compare metrics across sectors, we express all the sectors' multipliers relative to the sector with the lowest multiplier. The GDP multipliers are expressed relative to the lowest GDP-contributing sector from a multiplier perspective: *Fuel, chemicals, rubber and plastic (excl. SSA)* (highlighted in yellow), which exhibits the lowest GDP created per Rand spent. Similarly, the employment multipliers are expressed relative to the sector with the lowest employment multiplier: *Other manufacturing* (highlighted in green), which exhibits the lowest employment created per Rand spent.

70. The figure demonstrates how much more GDP and employment is created from spending by SSA compared to spending on the reference sectors (i.e. *Fuel, chemicals, rubber and plastic products (excl. SSA)* and *Other manufacturing*). For instance, every Rand spent on SSA's activities creates 43% more GDP relative to a Rand spent on *Other Manufacturing* (i.e., more economic activity for the same spend – shown on the horizontal axis). Similarly, every Rand spent on SSA's activities creates 126% more employment than a Rand spent on *Fuel, chemicals, rubber and plastic (excl. SSA)* (i.e., more jobs for the same spend – shown on the vertical axis).

71. The results show that spending on SSA's activities has a larger effect on both GDP and employment than the same spending in most other sectors in the economy, due to SSA's relatively large GDP and employment multipliers. Only a few sectors exhibit higher relative GDP multipliers (e.g. *Government and community services*, *Financial services* and *Retail, wholesale, hotels and catering*) or higher employment multipliers (e.g. *Retail, wholesale, hotels and catering*, *Agriculture*, and *Construction*), and only *Retail, wholesale, hotels and catering* exhibits higher multipliers for both GDP and employment.

72. Naturally, this does not imply that all spending should be allocated to the retail sector (*Retail, wholesale, hotels and catering*), which exhibits the highest relative GDP and employment multipliers, but it does imply that SSA contributes relatively more to the economy in terms of creating GDP growth and employment per Rand spent than most other economic sectors. This is because SSA is involved in the beneficiation of locally sourced raw materials and the supply of those products to local downstream firms. This highlights that SSA contributes notably to the South African government's policy objectives of industrialisation and localisation, as discussed in more detail below.

Figure 18: Relative multipliers of main economic activities: GDP relative to Employment in 2021



6 The Economic Contribution of Integrated vs Non-Integrated Companies in the Oil Industry

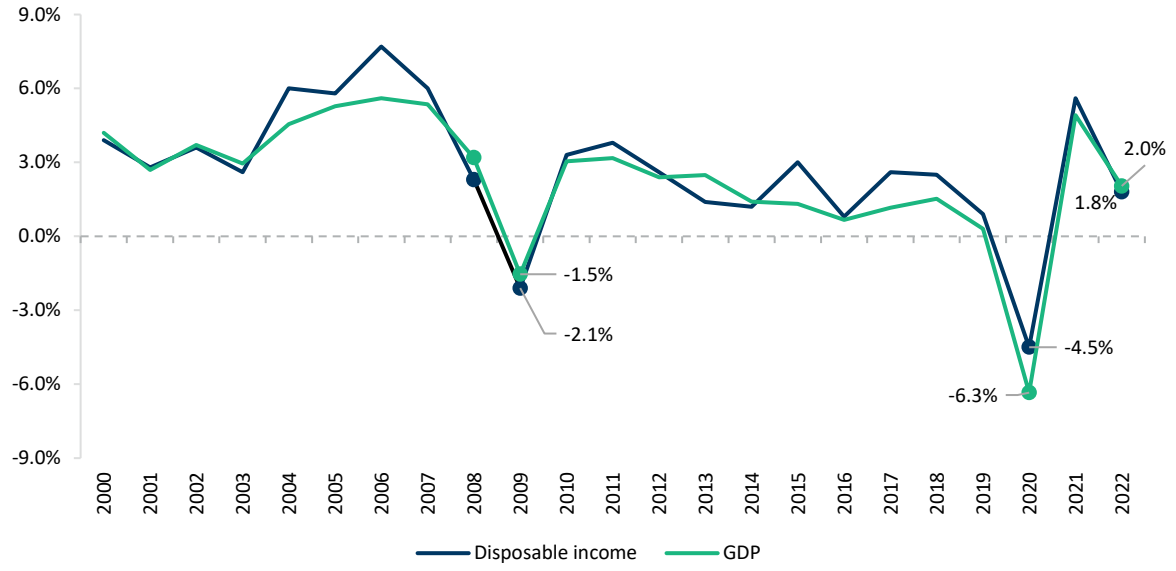
73. An important consideration in analysing the impact of SSA's contribution to the South African economy is how the operations of an entity like SSA in its capacity as a refinery supports the economy and economic activity, relative to entities which serve a similar function, but which do not have the industrial footprint of an entity like SSA.

74. In this section, we compare the economic contribution of integrated oil and gas companies, such as crude oil and synthetic refiners and manufacturers, to the contribution of non-integrated oil companies, such as independent suppliers, importers, wholesalers and marketers. While this analysis refers only to the oil industry (and not other value chains in which SSA participates), it is instructive to illustrate the difference in the economic contributions of integrated and non-integrated companies.

6.1 South Africa's macroeconomic context

75. Before analysing the economic contribution of integrated and non-integrated operations, we briefly consider the economic context in which this comparison takes place. Figure 18 and Figure 19 demonstrate South Africa's precarious economic situation, which sees the economy battling to generate meaningful economic growth, while unemployment remains stubbornly high following the Covid-19 pandemic.

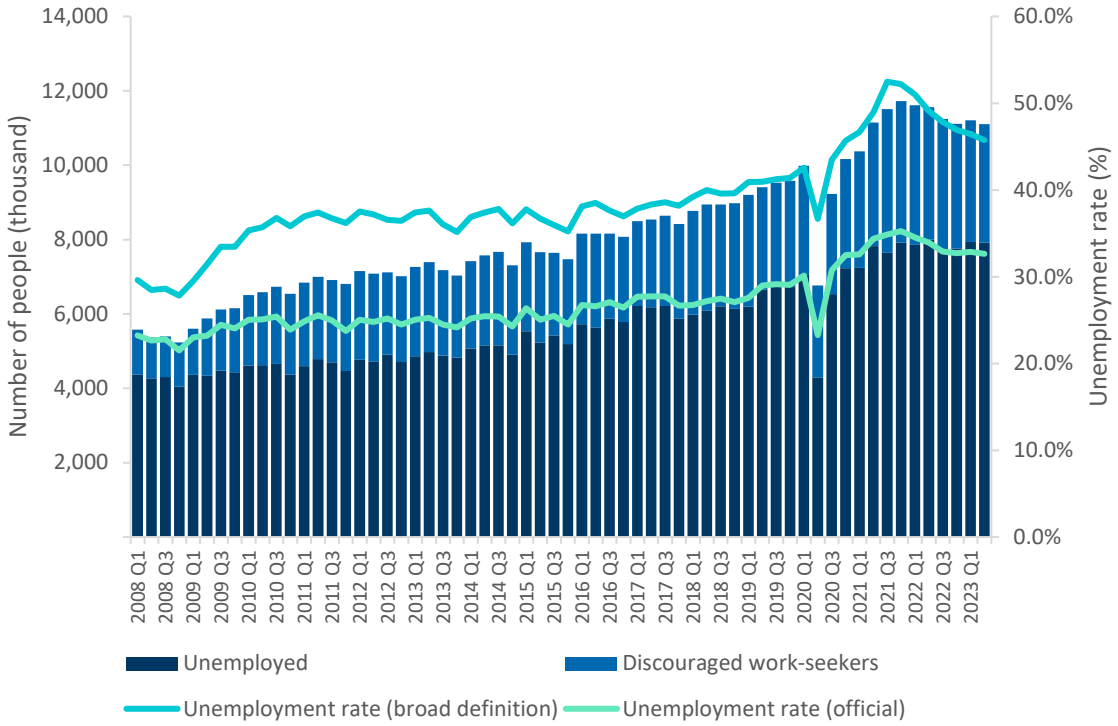
Figure 19: Real GDP and disposable income (2008 – 2022)



Source: StatsSA and SARB

76. Unemployment broadly defined (which takes account of discouraged work-seekers, who would take a job if offered, but have lost hope of finding employment) was close to 45.8% in the second quarter of 2023. By the official unemployment rate, close to one third (32.6%) of the economically active population is unemployed.

Figure 20: Unemployment in South Africa (2008Q1 – 2023Q2)



Source: Quarterly Labour Force Survey (2023 Q2)

77. This constrained economic situation is the backdrop against which decisions with significant consequences for the future of SSA's Secunda operations must be taken. SSA's significant economic contribution and integrated role within the South African economy render it an important stakeholder and participant in South Africa's economic landscape.

6.2 Integrated and non-integrated oil companies

78. Within the oil industry, there are several different types of participants operating across the value chain, whose activities and economic contributions have been disaggregated from the overall industry for further analysis. A comparison of the economic contribution of companies operating in the oil and gas industry as "**integrated**" and "**non-integrated**" operations is instructive:

- Integrated oil and gas companies (crude oil and synthetic refiners and manufacturers): Companies who operate crude oil or synthetic (gas or coal to liquids) refining facilities, as well as storage, distribution, wholesale and retail businesses across the country.
- Non-integrated companies (independent suppliers, wholesalers and marketers): Companies who do not operate any refining facilities, but purchase finished products from abroad for import, or from domestic refineries. These companies operate varying levels of storage, distribution, wholesale and retail businesses, depending on their individual business models.

79. Figure 20 and Figure 21 show the value chains of integrated and non-integrated companies, respectively.

Figure 21: Value chain of integrated oil companies

Figure 22: Value chain of non-integrated oil companies

80. Before comparing the economic contribution of integrated and non-integrated companies, it is necessary to caveat the analysis. The comparison between the economic contribution of integrated and non-integrated companies relies on data collected in 2019, and analysis done for the downstream oil industry in 2020.[9] The analysis captures the downstream oil industry in 2019 when 6 refineries were operational in South Africa.[10] In 2021,[11] only 2 refineries remained operational: Secunda and Natref.

81. The comparison therefore captures the economic contribution of integrated and non-integrated companies in the downstream oil industry at a time when more companies had integrated operations in South Africa than was the case in 2021. Nonetheless, it is instructive to demonstrate the degree to which the economic contribution of integrated operators (like SSA) outstrips that of non-integrated companies who operate according to an import model.

6.3 Measuring the contribution of integrated vs non-integrated oil companies

82. Table 5 compares the economic contribution, on a per company basis, of integrated and non-integrated companies in the downstream oil industry. The economic contribution of integrated operators is significantly higher than that of non-integrated members because the size of integrated operations is significantly higher than for non-integrated companies.

83. To understand how this contribution supports economic activity via the upstream value chain (via backward linkages) for integrated and non-integrated companies, we create a turnover multiplier by dividing each category of economic contribution by average turnover for integrated and non-integrated companies, respectively. The turnover multiplier accounts for differences in the size of

9 FTI Consulting. September 2021. The economic contribution of the downstream oil industry to South Africa in 2019. Prepared for SAPIA.

10 SAPREF (Durban), ENREF (Durban), NATREF (Sasolburg), Astron Energy (Cape Town), Secunda CTL (Secunda), and PetroSA GTL (Mossel Bay)

11 Operations at Astron Energy commenced against in 2023.

operations between integrated and non-integrated companies.

Table 4: Economic contribution (GDP & employment) of integrated and non-integrated companies

Economic Indicator		Integrated companies		Non-integrated companies	
		Company Average[12] (R billion / jobs)	Turnover Multiplier[13]	Company Average[14] (R billion / jobs)	Turnover Multiplier[15]
GDP (R billion – Real 2019 values)	Direct	18.42	**0.47**	0.63	**0.12**
	Indirect	2.73	**0.07**	0.37	**0.07**
	Induced	4.62	**0.12**	0.37	**0.07**
	Total	25.77	**0.66**	1.37	**0.27**
Employment (Number of jobs)	Direct	22,881	**579**	718	**142**
	Indirect	9,001	**228**	1,124	**222**
	Induced	16,812	**426**	1,350	**267**
	Total	48,694	**1,233**	3,192	**631**

84. The interpretation of the turnover multiplier for GDP is as follows:

- **Integrated companies**: For each R1 billion in turnover, integrated companies' operations supported R660 million towards national GDP via backward linkages to supplying sectors in their upstream value chains.
- **Non-integrated companies**: For each R1 billion in turnover, non-integrated companies' operations supported R270 million towards national GDP via backward linkages to supplying sectors in their upstream value chains.

85. The interpretation of the turnover multiplier for employment is as follows:

- **Integrated companies**: For each R1 billion in turnover, integrated companies' operations supported 1,233 jobs via backward linkages to supplying sectors in their upstream value chains.
- **Non-integrated companies**: For each R1 billion in turnover, non-integrated companies' operations supported 631 jobs via backward linkages to supplying sectors in their upstream value chains.

86. This analysis is relevant when considering the economic consequences of decommissioning SSA's operations. Even if downstream customers or users of SSA's products can substitutes these inputs with alternatives sources such as non-integrated companies or importers, the economic contribution of SSA's operations (as an integrated operator with refining and manufacturing capacity in-country) to the South African economy far-outstrips that of the alternative suppliers. For both GDP and employment, the contribution per R1 of turnover of integrated companies (like SSA) is significantly larger than that of non-integrated companies.

12 *Company average* is economic contribution (direct, indirect or induced) for integrated companies divided by the number of integrated companies. Data provided by SAPIA members in 2019.

13 *Turnover multiplier* is *company average* per economic contribution metric for integrated companies divided by average company turnover for integrated companies.

14 *Company average* is economic contribution (direct, indirect or induced) for non-integrated companies divided by the number of non-integrated companies. Data provided by SAPIA members in 2019.

15 *Turnover multiplier* is *company average* per economic contribution metric for non-integrated companies divided by average company turnover for non-integrated companies.

7 Conclusion

87. This report shows that SSA makes a considerable contribution to the South African economy, both at a national level and within the local municipalities in which it operates. This contribution is measured by the demand it creates for inputs from upstream sectors via its backward linkages. At a national level, we find that SSA's operations supported 4.84% of GDP, 3.07% of employment, 3.26% of labour remuneration, and 10.06% of tax revenue in 2021. At the local municipal level, SSA's contributions to the Govan Mbeki and Metsimaholo local municipalities are material and particularly important given the economic conditions in the areas.

88. We find that SSA can be classified as a "key sector" with strong backward and forward linkages to other sectors within the South African economy. SSA contributes relatively more to the economy in terms of creating GDP growth and employment per Rand spent than most other economic sectors. This is because SSA is involved in the beneficiation of locally sourced raw materials and the supply of those products to local downstream firms.

89. SSA also supports substantial economic value creation by meeting demand for inputs and products in other downstream sectors. Many industries rely on SSA for crucial inputs into their production processes, and in some cases, SSA is the sole local producer of those inputs. These sectors are vulnerable if SSA's operations become jeopardised. While imports may fulfil some demand for SSA's products in the medium- to long-term, in the short-term many industries face severe supply constraints. In instances where the importation of substitute products is either infeasible or impossible, industries relying on key inputs from SSA may face an existential threat.

90. Even if users of SSA products can replace these with substitutes via importation, the cost to the South African economy must be considered in terms of the level of activity supported by SSA. A comparison of the economic contribution of integrated operators with refining and manufacturing capacity in-country, such as SSA, far outstrips the economic contribution of alternative suppliers such as non-integrated companies or importers.

91. Should SSA's operations cease in South Africa, there may be dire implications for the South African economy. It is therefore vital to consider the unintended economic consequences of a decision which may place SSA's operational future in jeopardy, especially given South Africa's precarious economic climate.

8 Appendices

8.1 Appendix A: Methodology for an Economic Impact Assessment

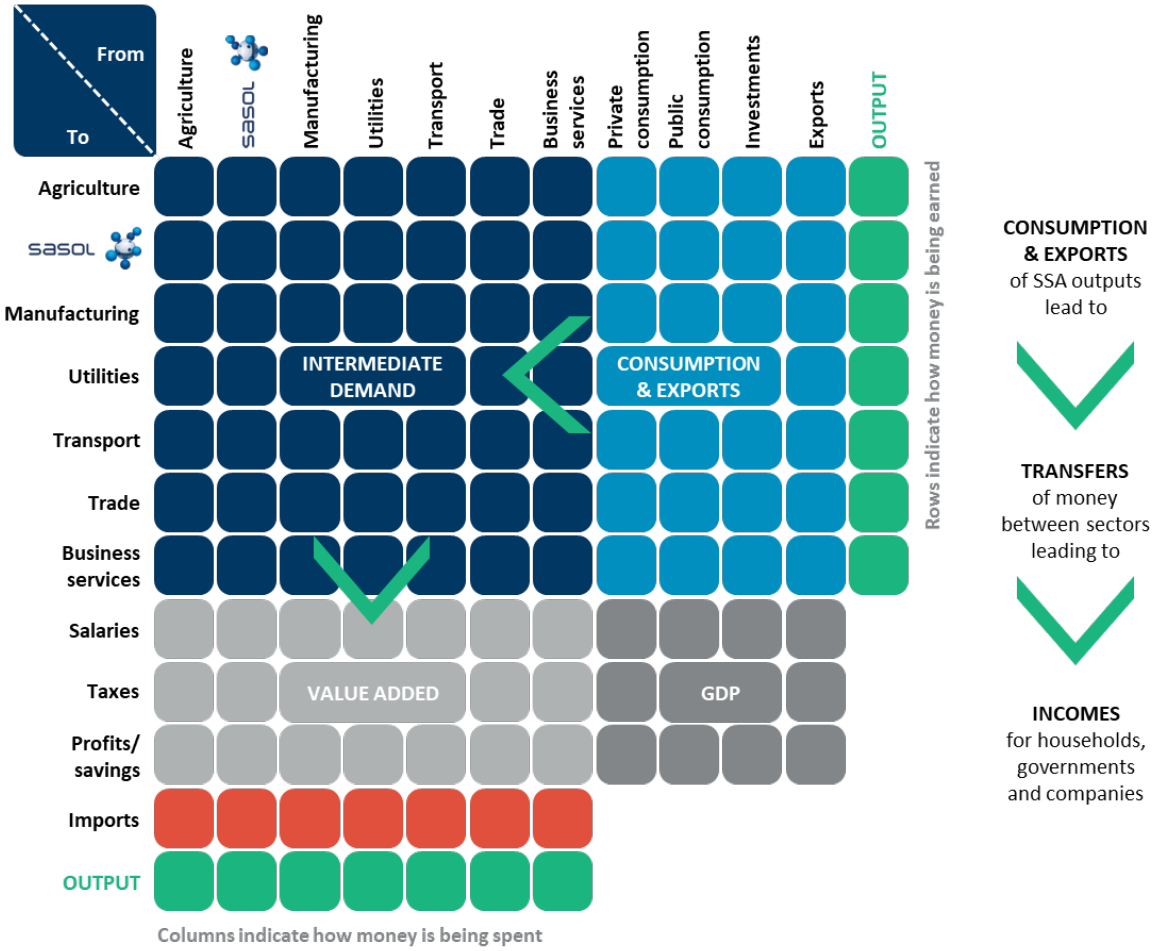
92. In this section, we present a detailed discussion of the methodology used to measure the economic contribution of SSA to the national economy. Specifically, we discuss the I-O methodology used in this study to model this contribution. The method is practically implemented using a SAM to represent the South African economy statistically, which we turn to next.

8.1.1 Using the SAM to assess flows and linkages within the economy

93. The 2021 SAM is used to represent the South African economy statistically. This square matrix represents all the financial transactions between productive and non-productive institutions and markets, such as factor markets, savings-investments, households, government, and the rest of the world at a specific time (i.e., a snapshot).

94. At the heart of the SAM is an I-O table, which shows inputs into the economy and output produced. These flows or linkages capture the integrated/connected nature of each sector in the economy. A visual representation of a SAM is presented in Figure 22 below.

Figure 23: Visual representation of the Social Accounting Matrix (SAM)



95. The SAM captures production (backward and forward) linkages in an economy. In Section 2, we discussed what we mean by backward and forward linkages:

- **Backward linkages refer to inputs to SSA from the rest of the economy**, e.g., local community-focused procurement, such as security, clothing, food supplies and high value-added items, such as capital machinery. Backward linkages encompass subcontracting, supplier contracts, input service collaborations and hence create employment and offer the potential for enhancing domestic manufacturing capacity.

- **Forward linkages are created by adding value to the commodities produced by SSA by other industries that use SSA's products as inputs** or raw materials in their production processes.

96. In addition, the SAM contains the added value generated by SSA and its value chain and the distribution to households in the form of income from capital and labour.

97. This study uses a 2021 SAM for South Africa compiled by Quantec and is updated on an annual basis. The SAM is disaggregated using data from several sources: data and information provided by SSA's business units for FY21; National Accounts from the SARB Quarterly Bulletin; SARS tax statistics; Income and Expenditure Surveys; Labour Force Surveys; GDP statistical releases (P0441), and Stats SA's Supply- and Use Tables ("**SUTs**").

8.1.2 Using the Input-Output methodology to quantify the socio-economic impact

98. The I-O methodology quantifies the linkages that SSA's business units have with other industries in the economy. Specifically, SSA buys or sells directly from several industries, and its customers and suppliers may be intricately connected to other unrelated industries. As a result, SSA may have a substantial influence on the economy through its direct and indirect relations with other industries. The I-O method therefore traces the flow of money through the economy to capture how the output of one sector becomes the input of another, that is, how the industries depend on one another.[16]

99. A typical SAM-based EIA begins with an injection of demand into the economy (initial impact) and estimates the total (economy-wide) impact in the following sequence:

- The ***initial economic impact*** (injection) results from operational and capital expenditures by SSA. It represents SSA's employment numbers, operational and capital expenditure and tax contributions.

- The ***first-round effects*** consider the impact of ongoing spending on and by direct suppliers to SSA (e.g., production, employment and tax revenue stimulated at first-round suppliers).

  — The sum of the initial injection (e.g., the total production/turnover of the industry, the intermediate goods bought, the salaries and wages paid, and the profits generated by SSA) and the impact on its first-round suppliers constitutes the direct impact.

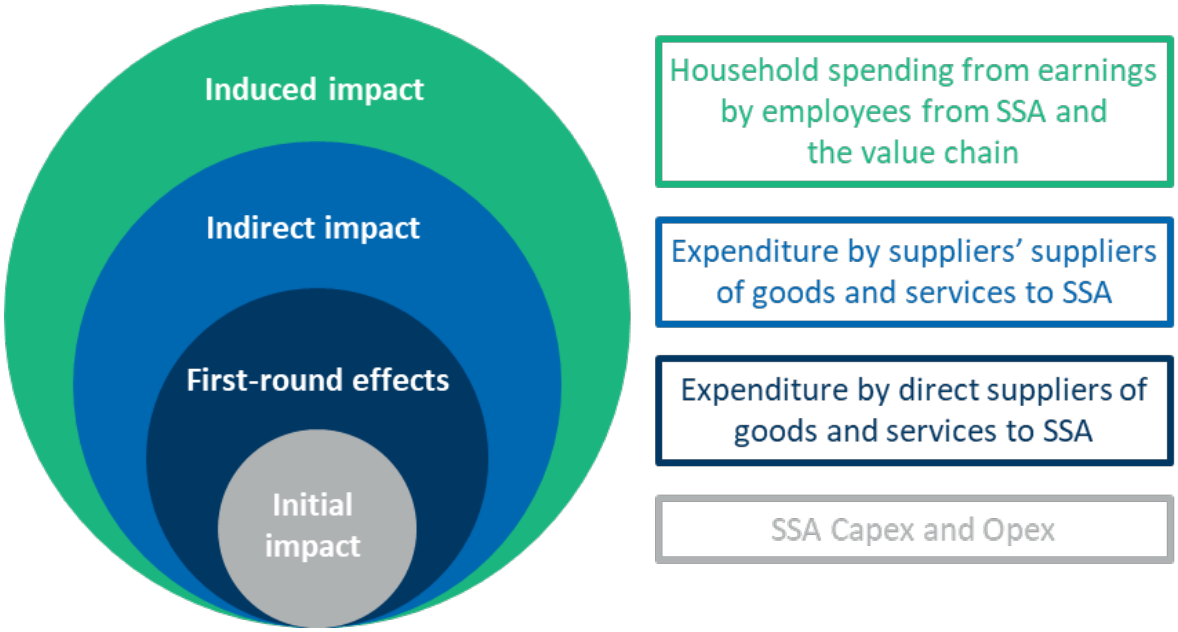
- ***Indirect impact***, also referred to as the "rest of indirect", measures the contribution of SSA's direct suppliers and trade partners who purchase goods and services from their suppliers (i.e., suppliers' suppliers), who in turn remunerate their employees and pay taxes.

16 We focus specifically on this analysis in Section 5.

- ***Induced effects*** consist of the spending by households of the income they derive from the salaries and wages earned in the first three categories. This spending, in turn, generates further production by industries.

100. When the direct, indirect, and induced effects are summed, we derive the total economic impact, as illustrated in Figure 23 below. The EIA quantifies the impact demand created by the business, its value chain and the rest of the economy in terms of the following macroeconomic aggregates: Gross Domestic Product ("**GDP**"); household income; fiscal impacts; and employment creation.

Figure 24: Total economic impact of SSA



101. We employ an I-O methodology with a SAM multiplier model to capture the interlinkages throughout the economy.

102. This analysis is an upstream assessment, which considers backward linkages throughout the economy. It begins with an injection of demand into the economy (via SSA's procurement and capital expenditure) and estimates the total economy-wide impact by quantifying the initial economic impact, the first-round effects, the indirect impact, and the induced effects. The total economic impact of SSA is equal to the sum of the direct (injection and first-round effects), indirect, and induced effects.

8.2 Appendix B: Methodology: Disaggregating SSA's local economic impact

103. Whereas the national analysis traced transactions and linkages through the SAM for the entire South African economy, the analysis of SSA's contribution to the local economies of the Govan Mbeki and Metsimaholo LMs relies on data captured by a multi-regional input-output model ("**MRIO**"). The MRIO model accounts for the interregional and international flow of goods, services, and income. This is important because economic activity in one region can have ripple effects throughout the economy, both within the region and in other regions.

104. We rely on SSA's national and business unit-level data to reflect the economic activity of SSA located within the Govan Mbeki LM and the Metsimaholo LM. This was done using the Flegg Location Quotient ("**FLQ**") formula, a non-survey method used to measure the relative concentration or density of a specific sector in a region. In this case, the FLQ formula was used to measure the concentration of SSA's activities in the Govan Mbeki LM and the Metsimaholo LM. We relied on these adjusted data to estimate the economic contribution of SSA to the Govan Mbeki LM and the Metsimaholo LM. This included the contribution of SSA to the municipality's GDP, employment, and income, among others.

105. To improve the analysis, we also took the following steps:

- We assessed which activities of SSA (i.e., all activities related to the Sasol Secunda plant, e.g., mining, synfuels, gas and chemicals) are physically located within the Govan Mbeki LM. This helped us identify the specific economic activities directly relevant to the municipality. The same was done for Sasolburg, located in the Metsimaholo LM.

- Regarding SSA's contribution to tax revenue in the region, we only considered activity or production taxes (e.g., municipal rates and taxes, etc.) and excluded all product taxes (e.g., VAT, customs, excise, fuel levy, etc.) and direct taxes (i.e., corporate tax and PAYE) from the local analysis.

106. This approach provides a more accurate and comprehensive assessment of SSA's economic contribution to the Govan Mbeki LM and the Metsimaholo LM. It also helps us understand how SSA's activities impact the local economy and provides insights into the interdependencies between sectors within the municipality.

107. A local analysis of this nature introduces certain challenges to the analysis:

- SSA's internal data does not capture "where" spending happens. Although it identifies the sector for procurement, FTI had to make assumptions about the distribution of expenditure at a local level, including whether goods and services were sourced from within or outside the LM.

- To allocate expenditure at a local level from the total, we relied on external assumptions. For instance, we factored in the proximity of the sources of goods and services to determine spending distribution within the LM. Additionally, we assumed that specialised capital goods, due to their nature, might need to be sourced outside the LM. This approach, while necessary, may result in slightly less precise allocations compared to a standardised system.

108. Despite these uncertainties, the analysis provides valuable insights into the economic contribution of SSA to the Govan Mbeki LM and the Metsimaholo LM.

8.3 Appendix C: SSA's economic contribution to the Govan Mbeki Local Municipality

8.3.1 SSA contribution to GDP and employment, by sector

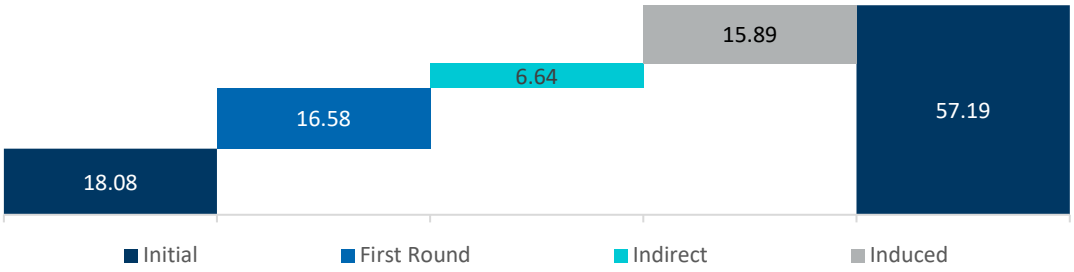
Table 5: SSA's local GDP and employment contribution to the Govan Mbeki LM, by sector

	Sector	SSA Initial impact	First-round effects	Indirect impact	Induced effects	SSA Total contribution	SSA contribution to Govan Mbeki LM total (%)
Value-added GDP at market prices (R billion)	SSA	**18.08**	0	0	0	**18.08**	
	Manufacturing	**0**	6.84	1.63	4.07	**12.54**	**87.8%**
	Mining and quarrying	**0**	7.16	1.62	1.33	**10.11**	**39.5%**
	Finance, real estate and business services	**0**	0.99	1.30	3.78	**6.07**	**66.1%**
	Trade, catering and accommodation	**0**	0.28	0.66	2.50	**3.44**	**20.6%**
	Transport, storage and communication	**0**	0.46	0.65	0.98	**2.09**	**81.8%**
	General government services	**0**	0.09	0.27	1.25	**1.61**	**29.6%**
	Electricity, gas and water	**0**	0.66	0.24	0.54	**1.44**	**75.8%**
	Agriculture, forestry and fishing	**0**	0.00	0.16	0.85	**1.00**	**88.7%**
	Personal services	**0**	0.01	0.04	0.51	**0.57**	**6.0%**
	Construction	**0**	0.09	0.06	0.09	**0.23**	**16.7%**
	Total	**18.08**	**16.58**	**6.64**	**15.89**	**57.19**	**65.2%**
Employment (jobs '000s)	SSA	**6,864**	0	0	0	**6,864**	
	Finance, real estate and business services	**0**	2,134	3,496	4,587	**10,217**	**97.0%**
	Trade, catering and accommodation	**0**	380	2,908	6,300	**9,588**	**46.5%**
	Manufacturing	**0**	2,456	1,667	3,714	**7,838**	**71.5%**
	Mining and quarrying	**0**	4,077	682	605	**5,364**	**31.1%**
	Agriculture, forestry and fishing	**0**	0	1,191	3,821	**5,012**	**93.3%**
	Personal services	**0**	92	236	4,671	**4,999**	**22.1%**
	General government services	**0**	111	681	2,384	**3,176**	**47.3%**
	Transport, storage and communication	**0**	398	1,168	984	**2,550**	**88.1%**
	Construction	**0**	202	310	330	**843**	**14.5%**
	Electricity, gas and water	**0**	138	93	155	**386**	**66.7%**
	Total	**6,864**	**9,989**	**12,434**	**27,551**	**56,837**	**55.0%**

8.3.2 Detailed results for SSA in the Govan Mbeki LM

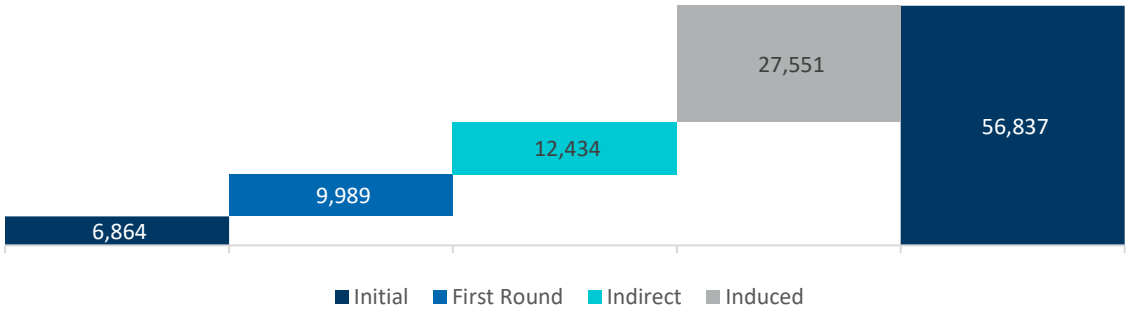
109. SSA contributes R 18.08 billion to the Govan Mbeki LM's GDP through its initial economic impact resulting from its operational and capital expenditures within the region. The first-round economic effects, which includes ongoing spending on and by direct suppliers to SSA adds a further R16.58 billion to GDP. SSA's activities indirectly supports a further R6.64 billion arising from operations and activities at suppliers of direct suppliers to SSA, while an additional R15.89 billion is added to GDP via induced effects resulting from the spending of wages and salaries generated throughout SSA's upstream value chain, within the local region. Overall, SSA's total contribution to GDP of the Govan Mbeki LM is R57.19 billion.

Figure 25: SSA's contribution to Govan Mbeki LM GDP (R billion), 2021



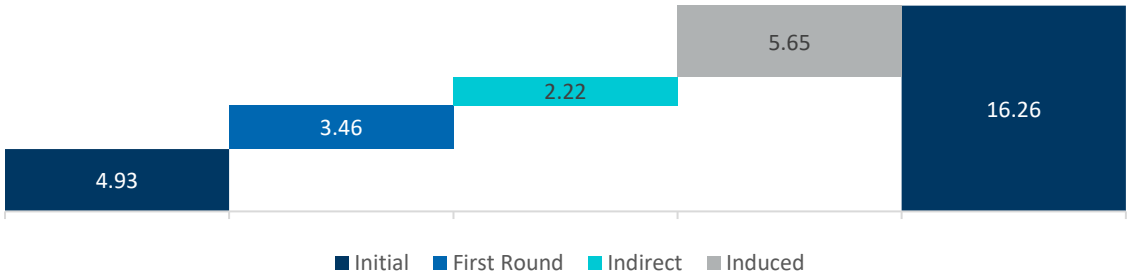
110. SSA supports 6,864 jobs through its initial employment impact resulting from its operations and activities within the Govan Mbeki LM. SSA's first-round employment effects, which includes employment amongst direct suppliers to SSA supports a further 9,989 jobs. SSA's activities indirectly supports a further 12,434 jobs amongst suppliers to direct suppliers to SSA, while an additional 27,551 jobs are supported via SSA's induced effects along its upstream value chain within the region. Overall, SSA supports a total of 56,837 jobs throughout the economy via its direct, indirect and induced effects within the local municipality.

Figure 26: SSA contribution to Govan Mbeki LM employment (no. of jobs), 2021



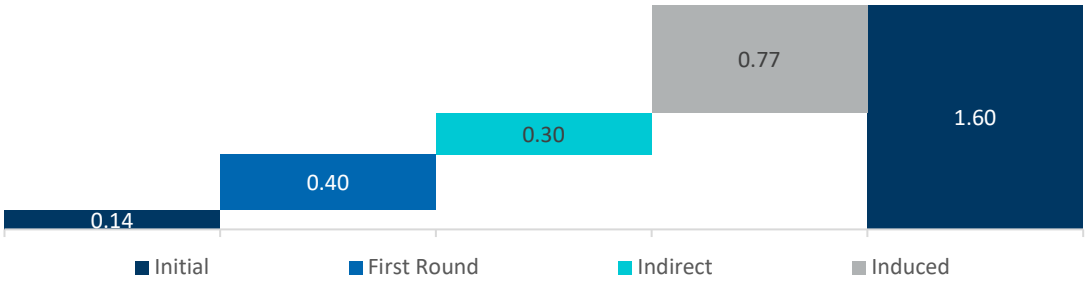
111. SSA contributes R4.93 billion to labour remuneration through its initial impact resulting from employment throughout its operations. SSA's first-round effects, which includes wages and salaries derived from employment amongst direct suppliers to SSA adds a further R3.46 billion to labour remuneration. SSA's activities indirectly supports a further R2.22 billion in labour remuneration derived from employment amongst suppliers of direct suppliers to SSA, while an additional R5.65 billion is supported via SSA's induced effects along its upstream value chain. Overall, SSA's total contribution to labour remuneration within the Govan Mbeki LM is R16.26 billion.

Figure 27: SSA contribution to Govan Mbeki LM labour renumeration (R billion), 2021



112. SSA's contributes R0.14 billion to government tax revenue through its initial impact resulting from taxation of activities and operations within the Govan Mbeki LM. SSA's first-round effects, which includes tax revenues generated in these categories by the activities of direct suppliers to SSA adds a further R0.40 billion in tax revenues. SSA's activities indirectly supports a further R0.3 billion in tax revenues arising from operations and activities at suppliers of direct suppliers to SSA, while an additional R0.77 billion in tax revenues is added via induced effects along SSA's upstream value chain. Overall, SSA's total contribution to government revenue is R1.60 billion.

Figure 28: SSA 's contribution to Govan Mbeki LM government revenue (R billion), 2021



8.4 Appendix D: SSA's economic contribution to the Metsimaholo Local Municipality

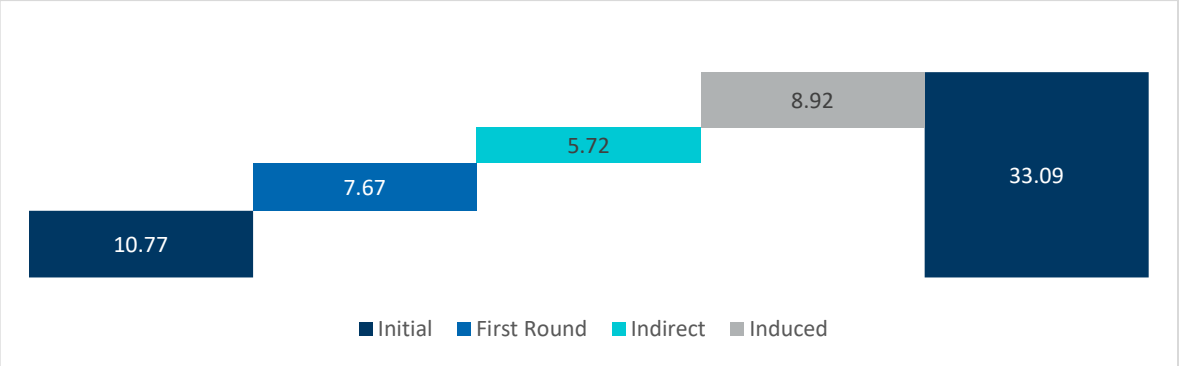
8.4.1 SSA contribution to GDP and employment, by sector

	Sector	SSA Initial impact	First-round effects	Indirect impact	Induced effects	SSA Total contribution	SSA contribution to Metsimaholo LM total (%)
Value-added GDP at market prices (R billion)	SSA	**10.77**	0	0	0	**10.77**	
	Manufacturing	**0**	4.45	1.67	3.49	**9.61**	**82.9%**
	Mining and quarrying	**0**	1.63	1.50	0.47	**3.59**	**86.5%**
	Finance, real estate and business services	**0**	0.36	0.76	1.72	**2.83**	**49.2%**
	Electricity, gas and water	**0**	0.82	0.32	0.72	**1.86**	**55.7%**
	Trade, catering and accommodation	**0**	0.05	0.86	0.68	**1.59**	**40.1%**
	General government services	**0**	0.06	0.21	0.93	**1.20**	**30.9%**
	Transport, storage and communication	**0**	0.24	0.30	0.54	**1.09**	**47.3%**
	Personal services	**0**	0.00	0.03	0.22	**0.26**	**6.6%**
	Construction	**0**	0.07	0.05	0.07	**0.18**	**15.0%**
	Agriculture, forestry and fishing	**0**	0.00	0.02	0.09	**0.11**	**25.1%**
	Total	**10.77**	**7.67**	**5.72**	**8.92**	**33.09**	**81.5%**
Employment (jobs ' 000s)	SSA	**3,024**	0	0	0	**3,024**	
	Manufacturing	**0**	1,767	1,639	4,090	**7,496**	**88.4%**
	Trade, catering and accommodation	**0**	135	3,733	2,626	**6,495**	**87.3%**
	Finance, real estate and business services	**0**	864	2,045	2,668	**5,577**	**91.6%**
	Personal services	**0**	49	174	2,868	**3,091**	**31.0%**
	General government services	**0**	52	528	2,047	**2,627**	**89.0%**
	Mining and quarrying	**0**	931	924	311	**2,166**	**92.1%**
	Transport, storage and communication	**0**	131	528	582	**1,240**	**90.1%**
	Construction	**0**	150	236	322	**708**	**17.7%**
	Agriculture, forestry and fishing	**0**	0	134	510	**644**	**33.2%**
	Electricity, gas and water	**0**	116	116	236	**469**	**88.9%**
	Total	**3,024**	**4,196**	**10,058**	**16,261**	**33,538**	**74.3%**

8.4.2 Detailed results for SSA in the Metsimaholo LM

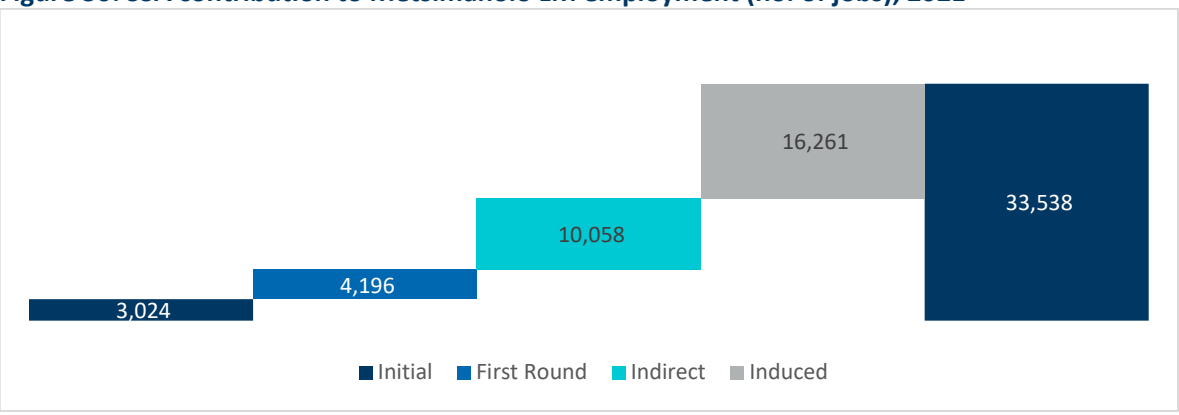
113. SSA contributes R10.77 billion to the Metsimaholo LM's GDP through its initial economic impact resulting from its operational and capital expenditures within the region. The first-round economic effects, which includes ongoing spending on and by direct suppliers to SSA adds a further R7.67 billion to GDP. SSA's activities indirectly supports a further R5.72 billion arising from operations and activities at suppliers of direct suppliers to SSA, while an additional R8.92 billion is added to GDP via induced effects resulting from the spending of wages and salaries generated throughout SSA's upstream value chain, within the local region. Overall, SSA's total contribution to GDP of the Metsimaholo LM is R33.09 billion.

Figure 29: SSA's contribution to Metsimaholo LM GDP (R billion), 2021



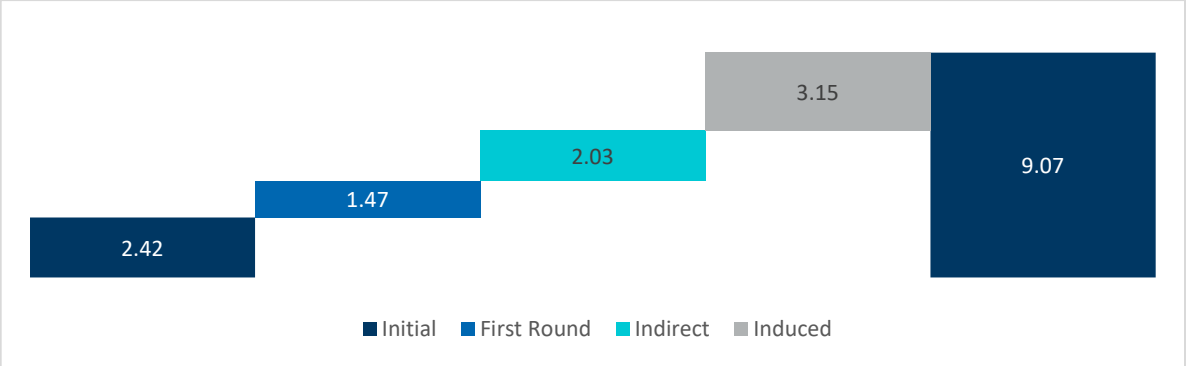
114. SSA supports 3,024 jobs through its initial employment impact resulting from its operations and activities within the Metsimaholo LM. SSA's first-round employment effects, which includes employment amongst direct suppliers to SSA supports a further 4,196 jobs. SSA's activities indirectly supports a further 10,058 jobs amongst suppliers to direct suppliers to SSA, while an additional 16,261 jobs are supported via SSA's induced effects along its upstream value chain within the region. Overall, SSA supports a total of 33,538 jobs throughout the economy via its direct, indirect and induced effects within the local municipality.

Figure 30: SSA contribution to Metsimaholo LM employment (no. of jobs), 2021



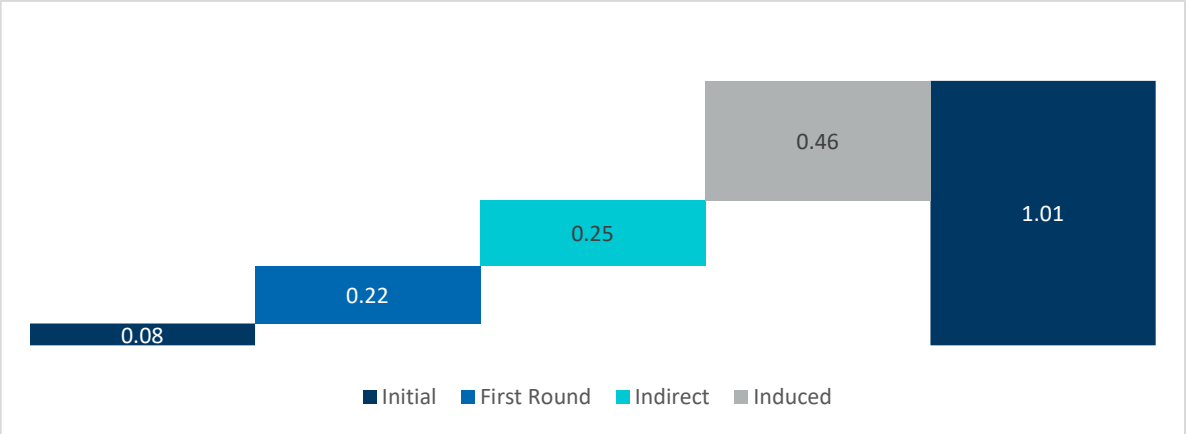
115. SSA contributes R2.42 billion to labour remuneration through its initial impact resulting from employment throughout its operations. SSA's first-round effects, which includes wages and salaries derived from employment amongst direct suppliers to SSA adds a further R1.47 billion to labour remuneration. SSA's activities indirectly supports a further R2.03 billion in labour remuneration derived from employment amongst suppliers of direct suppliers to SSA, while an additional R3.15 billion is supported via SSA's induced effects along its upstream value chain. Overall, SSA's total contribution to labour remuneration within the Metsimaholo LM is R9.07 billion.

Figure 31: SSA contribution to Metsimaholo LM labour renumeration (R billion), 2021



116. SSA's contributes R0.08 billion to government tax revenue through its initial impact resulting from taxation of activities and operations within the Metsimaholo LM. SSA's first-round effects, which includes tax revenues generated in these categories by the activities of direct suppliers to SSA adds a further R0.22 billion in tax revenues. SSA's activities indirectly supports a further R0.25 billion in tax revenues arising from operations and activities at suppliers of direct suppliers to SSA, while an additional R0.46 billion in tax revenues is added via induced effects along SSA's upstream value chain. Overall, SSA's total contribution to government revenue is R1.01 billion.

Figure 32: SSA 's contribution to Metsimaholo LM government revenue (R billion), 2021



8.5 Appendix E: Key sector analysis of the South African economy

117. Table 7 summarises the detailed results of the key sector analysis.

Table 6: Key sector analysis in terms of output, weighted by sector size

Sector	SIC	Weighted Backward Linkages	Weighted Forward Linkages
Agriculture	**[11]**	**1.18**	**2.49**
Forestry	[12]	1.03	0.14
Fishing	[13]	1.20	0.15
Sasol South Africa	**SSA**	**1.01**	**1.15**
Coal	[21]	1.17	0.71
Gold	[23]	1.16	0.18
Iron ore	[241]	1.15	0.71
Chrome	[2421]	1.14	0.19
Copper	[2422]	1.14	0.02
Manganese ore	[2423]	1.15	0.26
Platinum group metals	[2424]	1.03	0.46
Other metallic minerals	[2429]	1.14	0.32
Other mining and quarrying	[22, 25-29]	1.11	0.66
Meat, fish, fruit etc.	[301]	1.14	0.92
Dairy products	[302]	1.10	0.28
Grain mill products	[303]	1.17	0.53
Other food products	[304]	1.12	0.68
Beverages	[305]	1.14	0.69
Tobacco	[306]	1.19	0.12
Textiles	[311]	1.23	0.04
Other textile products	[312]	0.93	0.08
Knitted, crocheted articles	[313]	0.88	0.02
Wearing apparel	[314]	0.94	0.17
Leather and leather and fur products	[315-316]	1.14	0.03
Footwear	[317]	0.96	0.03
Sawmilling and planing of wood	[321]	1.06	0.05
Products of wood	[322]	1.02	0.13
Paper and paper products	[323]	1.09	0.49
Printing, recorded media	[324-326]	1.04	0.34
Coke, petroleum products and nuclear fuel	[331-333]	0.89	1.68
Basic chemicals	[334]	0.94	0.43
Other chemical products	[335-336]	1.01	0.41
Rubber products	[337]	0.90	0.11
Plastic products	[338]	0.92	0.26
Glass and glass products	[341]	0.93	0.05
Non-metallic mineral products	[342]	0.98	0.24
Basic iron and steel products	[351]	1.02	0.38
Non-ferrous metal products	[352]	1.11	0.43
Structural metal products	[354]	1.04	0.17
Other fabricated metal products	[355]	1.07	0.37
General purpose machinery	[356]	0.95	0.11
Special purpose machinery	[357]	0.97	0.23
Household appliances	[358]	0.92	0.06
Office, accounting, computing machinery	[359]	0.96	0.02
Electric motors, generators, transformers	[361]	0.91	0.03

Sector	SIC	Weighted Backward Linkages	Weighted Forward Linkages
Electricity distribution and control apparatus	[362]	0.90	0.03
Insulated wire and cables	[363]	0.75	0.04
Other electrical equipment	[364-366]	0.88	0.08
Radio, television and communication apparatus	[371-373]	0.86	0.05
Professional equipment	[374-376]	0.92	0.04
Motor vehicles	[381-382]	0.81	0.49
Parts and accessories	[383]	1.08	0.39
Other transport equipment	[384-387]	0.92	0.07
Furniture	[391]	0.95	0.10
Other manufacturing groups	[392-395]	0.95	0.92
Electricity and gas	**[41]**	**1.14**	**1.64**
Water	[42]	1.22	0.46
Site preparation	[501]	1.03	0.02
Building of complete constructions	[502]	0.97	0.58
Building installation	[503]	0.91	0.16
Building completion	[504]	1.01	0.14
Renting of construction equipment	[505]	1.11	0.06
Wholesale trade, commission trade	**[61]**	**1.23**	**2.91**
Retail trade	**[62]**	**1.25**	**2.72**
Sale, maintenance, repair of motor vehicles	**[63]**	**1.19**	**1.19**
Catering and accommodation services	[64]	1.14	0.74
Land transport, transport via pipe lines	**[71]**	**1.09**	**2.07**
Water transport	[72]	1.14	0.04
Air transport	[73]	0.97	0.40
Auxiliary transport	**[74]**	**1.13**	**1.12**
Postal and related courier activities	[751]	1.02	0.18
Telecommunication	**[752]**	**1.14**	**2.05**
Financial intermediation except insurance and pension funding	**[81]**	**1.25**	**2.02**
Insurance and pension funding	**[82]**	**1.20**	**1.48**
Activities auxiliary to financial intermediation	**[83]**	**1.17**	**1.27**
Real estate activities	**[84]**	**1.33**	**3.54**
Renting of machinery and equipment, without operator and of personal and household goods	[85]	1.21	0.38
Computer and related activities	**[86]**	**1.19**	**1.09**
Research and development	[87]	1.18	0.04
Legal, accounting, bookkeeping and auditing activities	**[881]**	**1.23**	**1.73**
Architectural, engineering and other technical activities	[882]	1.17	0.83
Advertising	[883]	1.17	0.27
Business activities n.e.c.	**[889]**	**1.18**	**2.04**
National departments	**[91101]**	**1.13**	**1.03**
Provincial departments	[91102]	1.17	0.21
Local government	[91300]	1.14	0.54
Education	**[92]**	**1.17**	**1.72**
Health and social work	**[93]**	**1.12**	**1.74**
Sewerage, refuse, sanitation	[94]	0.99	0.23
Membership activities	[95]	1.10	0.11
Recreation, cultural, sport activities	[96]	1.13	0.67
Other activities	[99]	1.00	0.71
Minimum		**0.75**	**0.02**
Maximum		**1.33**	**3.54**

Note: Key sectors are highlighted in blue and bold.

8.6 Appendix F: SSA's Social Impact and Contribution

118. The analysis has presented an assessment of SSA's economic contribution both at the national and the local levels which house SSA's operations. SSA's economic contributions by quantifying SSA's linkages with other industries in the economy. The analysis therefore presents a quantitative assessment of the value SSA's economic activities and the additional value these activities generate across the South African economy. However, the model does not fully capture all aspects of SSA's operations and initiatives that generate economic and social impacts outside of its industry value chain.

119. Considering the significance of supporting and stimulating economic activity at the local level, it is also important to highlight SSA's impact on the communities and areas in proximity ("**fenceline communities**") to its various sites of operations.

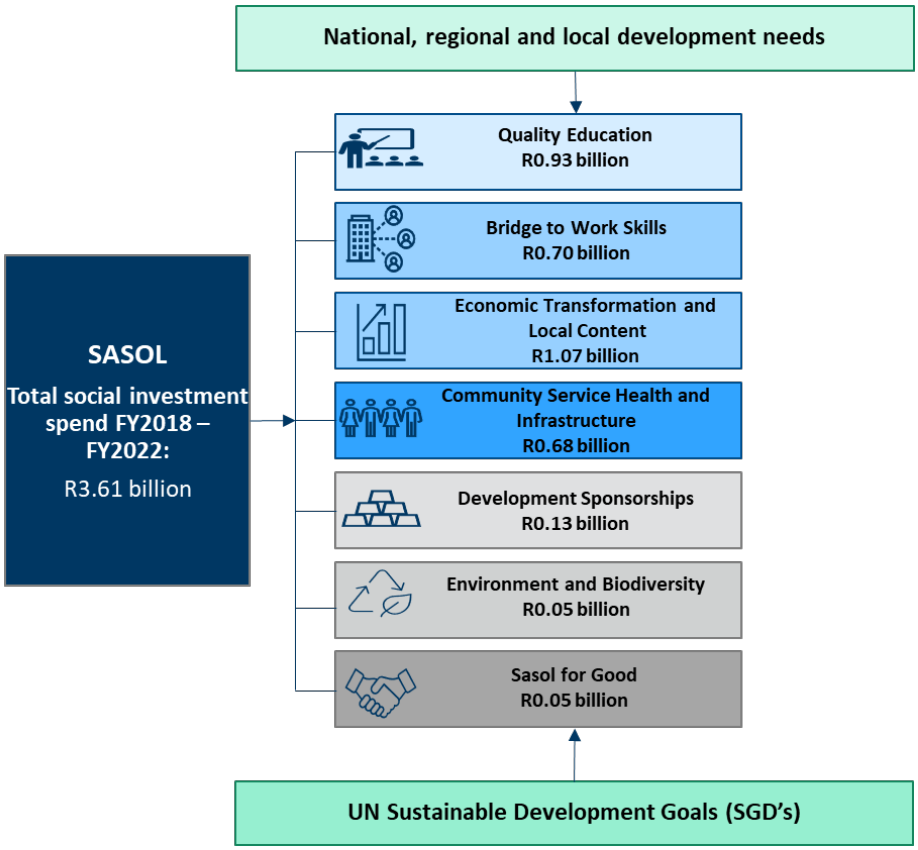
120. The following section presents an overview of SSA's various social investment initiatives aimed at the socioeconomic support and development of fenceline communities. We focus on SSA's activities in the Govan Mbeki and Metsimaholo local municipalities.

8.6.1 Overview: Sasol's Social investment focus area

121. Sasol, in partnership with government and civil society, drives a range of social impact programmes aligned with the UN Sustainable Development Goals ("**SDGs**") as well as national, regional and local requirements and needs. Sasol's main strategic focus areas include education, skills and entrepreneurship, access to work opportunities, economic participation, health and environment, and community development.

122. Over the past 5 years, Sasol has invested more than R3.6bn across these social impact areas with particular focus placed on the development needs of local communities. The figure below illustrates SSA's total investment across seven strategic socio-economic focus areas between FY2018 and FY2022.

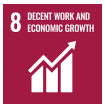
Figure 33: SSA total investment across strategic socio-economic focus areas



Source: Sasol in Society Report 2022, p.13, 20-23.

123. Table 8 compares the UN SDGs with Sasol's social contributions and shows that Sasol's social contributions aligned with the UN SDGs.

Table 7: Comparing the UN SDGs with Sasol's social contributions

UN SDG	Sasol's Social Contribution
3. Good Health and Well-being 	■ Provided a mobile eye clinic to Metsimaholo residents. ■ Over 2000 people reached through HIV awareness programs. ■ 2,500 patients reached through home-based care and support groups. ■ 139 senior citizens and people with disabilities provided with walkers and wheelchairs.
4. Quality Education 	■ Contribution to quality education spans across various segments. ■ 900 undergraduate and postgraduate students received funding, 57 graduated in 2022. ■ 69 of SSA's doctoral students are now full time academics. ■ All students have access to psychosocial support programmes.
8. Decent Work and Economic Growth 	■ 210 youth placed in artisan skills training programmes in Sasolburg with over 150 completing training. ■ 11 Youth Development Centres established in Mpumalanga. ■ 15 female entrepreneurs benefitted from the Women in Engineering Business Incubation Programme.

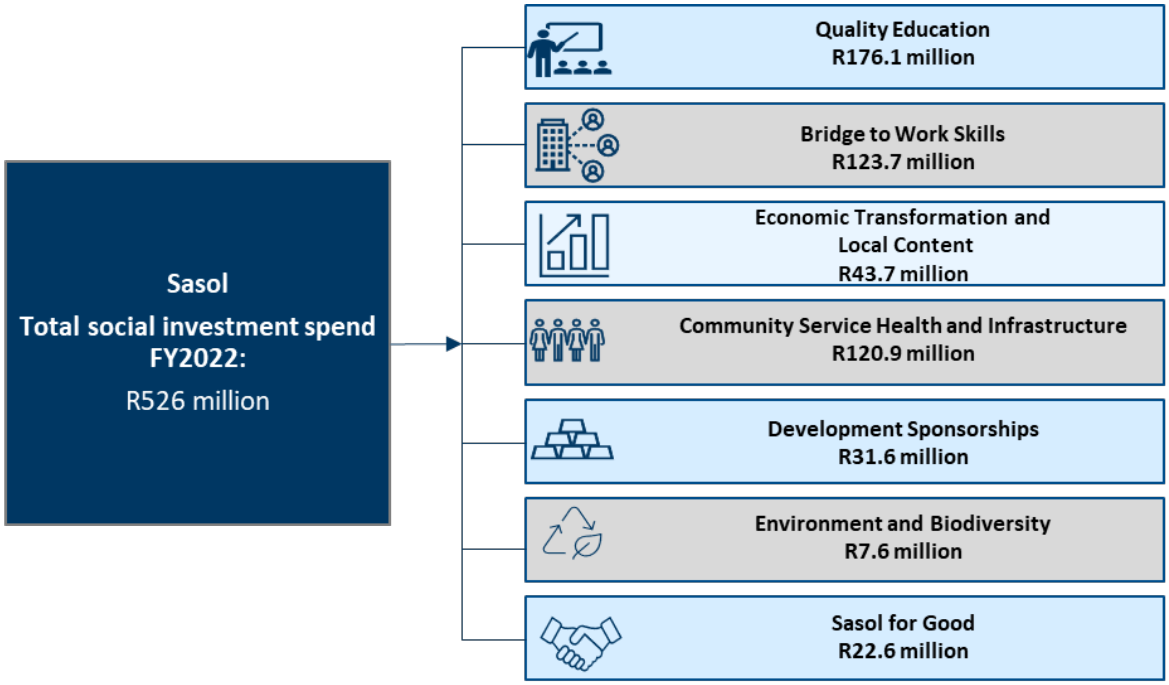
9. Industry, innovation and infrastructure 	■ Constructed an electrical substation to service eMbalenhle Ext 17. ■ Sponsored the maintenance and upgrade of 8 water systems and 74 boreholes, additionally 10 new boreholes were built, and 12 new systems are under construction. ■ The Secunda Small Business Centre and Sasolburg Business Incubator offer hotdesking solutions, meeting rooms, printer and scanning facilities to SMEs in surrounding regions.
12. Responsible Consumption and Production 	■ 5 SMEs in the textile and recycling industries provided with used PPE overalls to create new products as part of the Sasol PPE Upcycling Pilot programme. ■ SSA supports a 100% black women-owned company that manufactures eco-friendly bricks from recycled plastic waste and sand. ■ Waste management initiative in Sasolburg deployed with 180 skips and 42 chaperons. ■ Sasol's Environwaste programme rehabilitated dumping hotspots into food gardens.

Source: Sasol in Society Report 2022.

8.6.2 Social investment by focus area in South Africa

124. Sasol drives various social impact initiatives among communities in close proximity to SSA operations aligned with local needs and broader national development objectives. Sasol invested R526 million directly into these local communities in 2022. Social impact investments and initiatives range across multiple focus areas including education, skills development, economic transformation, health and the environment. These investments are summarised in Figure 33 and discussed in more detail in

Figure 34: SSA's social investment focus areas



Source: Sasol in Society Report 2022, p.30 - 80.

Table 8: SSA investments and initiatives

Focus Areas	Investments & Initiatives (FY2022)
Quality Education R176.1 million 	SSA initiatives are aimed at improving educational outcomes from early childhood development to the postgraduate level. Particular focus is placed on driving positive outcomes in Science, Technology, Engineering and Mathematics ("STEM") education: **Early childhood development:** SSA supported over 180 ECD centres in fenceline communities and provided training and on-site support to over 223 ECD practitioners. **STEM in schools:** 200 teachers and subject advisors from all 9 provinces have been trained on the 4th Industrial Revolution, while 200 Primary Schools have been supported in in the fields of coding and robotics. **Tertiary Education** 218 students completed their tertiary studies in 2021 while more than 600 others are continuing their studies with the support of Sasol bursary programmes. The Sasol TVET bursary programme supported 32 students in 2021/22 in STEM field studies aimed at training future engineers to help address South Africa's technical skills shortage in the energy sector. SSA collaborates with universities across South Africa to provide funding support for postgraduate scholarships and to strengthen their research and innovation capacity. In 2021/22, Sasol disbursed research grants worth R11 million to five universities.
Bridge to Work Skills R123.7 million 	The Sasol Bridge to Work ("BtW") programmes focus on improving the standard of training that will lead to enhanced economic opportunities in fenceline communities. Targeted interventions provide youth with technical, vocational and work readiness training enabling them to become positive contributors to local and national economies. **Youth Development Programme:** In Mpumalanga, Sasol established 11 Youth Development Centres at Nkomazi Municipality (Ehlanzeni District Municipality) and EMalahleni Municipality (Nkangala District Municipality). **BtW Artisan Skills Programme:** Sasolburg Operations has supported local youth to qualify as artisans in diverse disciplines. Over 150 youth have completed their trade tests. **Iphepe – Sasol Farmer Development Programme:** Sasol, in collaboration with partners, has funded the training of 99 young local and emerging subsistence farmers from Gert Sibande District Municipality in Mpumalanga. On completion of their training, these emerging farmers will be mentored and assisted to set up their farming enterprises.
Economic Transformation and Local Content R43.7 million 	Launched in 2018, SSA's transformation agenda is designed to address the socio-economic challenges faced by SME's and firms owned by Historically Disadvantaged Persons ("HDPs") in fenceline communities. Specific focus is placed on increasing spend on Exempted Micro Enterprises ("EMEs") while driving preferential procurement. SSA has exceeded the DTIC's Broad-Based Black Economic Empowerment ("B-BBEE") targets for preferential procurement spend through empowering 51% black-owned businesses as well as with 30% black women-owned businesses. **Priority 1: SMME Market Access** SSA aims to improve market access opportunities through participation on in industry events and improving visibility. In FY2022, Sasol spent R25,7 million on SME development and sponsored SME participation in a range of industry events. **Priority 2: Supply Chain Capability Building** SSA provides business and technical support aligned with its procurement needs and promotes economic inclusion and equity for woman in business. 44% of SSA's supplier base is 30% or more black women-owned businesses. **Priority 3: SMME Funding – Sasol Siyakha Fund**

	The Siyakha Fund grants commercial loans on favourable terms to Sasol suppliers to help them service their contracts and grow their businesses. The Siyakha Fund Loan Book stood at R639,5 million at end-FY22. **Priority 4: Business Support** Sasol offers business support programmes aimed at enhancing value for SME's. Support services to SME's include legal assistance and compliance services, tax registrations, industry-specific compliances and business licencing as well as safety, health and environment ("SHE") risk management services. **Priority 5: Business Infrastructure** SSA provides hardware and software access to small businesses in fenceline communities. The Secunda Small Business Incubator ("SBI") offers SME's access to crucial business infrastructure such as access to internet and hardware such as printers and scanners, physical office spaces, and specialised software applications.
Development Sponsorships R31.6 million	SSA maintains sponsorships across various sports (including football and Basketball) as well as initiatives across the fields of science, arts and conservation. In FY2022, spending on development sponsorships totalled R31.6 million.
Community Service Health and Infrastructure R120.9 million 	SSA supports access to quality community service infrastructure and healthcare systems through investment programmes that support and improve systems that sustain fenceline communities. **At the local community level, SSA invests in:** • Infrastructure development • Health and wellness programmes • Disability programmes **Recent initiatives and results include:** • Through Sasol Mining, completed the construction of a clinic in Parys, Free State, based on the Department of Health's ideal clinic model. • Donated emergency response vehicles to the Ngwathe Municipality in the Free State • Renovated the Buhle Farmer's Academy in Delmas, Mpumalanga to assist emerging farmers with more suitable accommodation during training. • Upgraded electrical ring substation no 4 in Extension 17, eMbalenhle, Mpumlanga to assist in addressing electricity shortages. • Refurbished and repaired 105 high mast lights to address safety and security risks in Zamdela township in Sasolburg, Free State.
Environment and Biodiversity R7.6 million 	Sasol community environmental programmes assist communities to understand the connection between economic opportunities and human dependence on the environment. The programmes cover waste management, water conservation, air quality, biodiversity and sustainable food systems. **Recent initiatives and results include:** • Over 280 people have benefitted from jobs resulting from Sasol environmental programmes in Sasolburg and Secunda. • The Sasol Envirowaste programme in Secunda has created employment, removed illegal dumps and implemented food gardens in communal spaces. • Up to 12,000 households have received education, training and support in terms of environmental awareness and food security. • Through Sasol Mining, 35 community water systems have been upgraded and maintained; a water pipeline from eMbalenhle to Charl Cilliers was built to provide better access to water; and bridges have been rehabilitated in the Phola township in Mpumalanga.
Sasol for Good R22.6 million	Sasol's volunteerism programme, Sasol for Good, structures and formalises employees inherent willingness to give. Through employee pledges and a Sasol matching scheme, more than R1,1 million was donated to employee nominated charities in FY2022.

Recent initiatives include:

KwaZulu-Natal flood disaster relief:

- More than R220,000 was raised and donations of non-perishables were collected in support of communities affected by the KwaZulu –Natal floods
- Sasol allocated over R7.5 million to support communities affected by the floods, which included the distribution of 2,000 immediate relief packs containing food, water, hygiene goods, blankets and mattresses. Two warm meals per day, for a period of three months were supplied to 27 ECD centres affected by the floods.

Source: Sasol in Society Report 2022, p.30 – 80.

8.6.3 Local community initiatives: Secunda in FY2022

125. SSA invests in creating shared value for the people living in fenceline communities by supporting strategic economic driver, skills and capacity development. In FY2022, SSA invested in more than R65 million across six key social focus areas in the Secunda area.

126. Some of the key initiatives and outcomes achieved include:

- The SSA ECD programme has benefited 819 learners in Dipaleseng Municipality and 309 in GMM by providing them with ECD resources to use at home.
- SSA, in collaboration with ROMPCO, provided 9 schools in the Mpumalanga Badplaas circuit district with fully furnished laboratories.
- Through its water and sanitation project, SSA is working to improve the sewer network in surrounding Govan Mbeki Municipality townships to prevent sewage spills and improve community health and safety.
- The Sasol for Good initiative delivered 1,700 Sasol care packs containing food, water, sanitary items, blankets and mattresses to displaced communities affected by the KZN floods in Umlazi, Pinetown, Durban, Mandeni, KwaDukuza, Phoenix, Verulam and Pietermaritzburg.

Figure 35: Social investment focus areas in Secunda

Source: Sasol in Society Report 2022, p.93 -100.

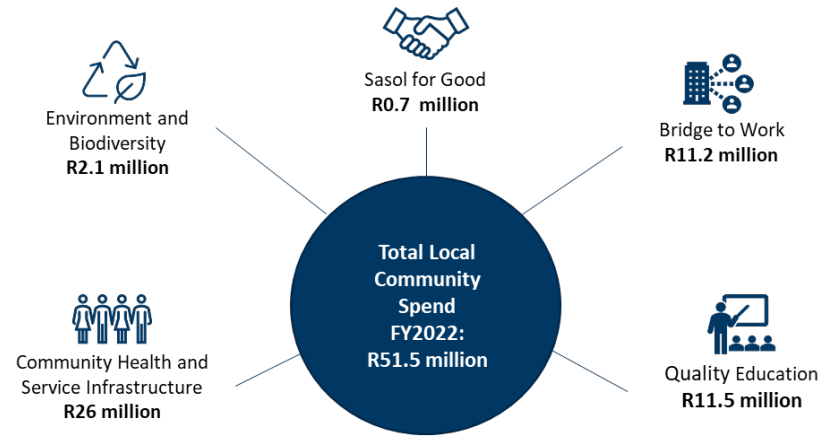
8.6.4 Local community initiatives: Sasolburg & Ekandustria in FY2022

127. SSA invests in creating shared value for the people living in fenceline communities by supporting strategic economic driver, skills and capacity development. In FY2022, SSA invested in more than R50 million across six key social focus areas in the Sasolburg and Ekandustria areas.

128. Some of the key initiatives and outcomes achieved include:

- Through its BtW programmes, Sasol assisted with the professional development of 150 artisans, supported 10 internship positions in various disciplines with local businesses and 42 welders who completed structural welding training.
- SSA community health and infrastructure programmes supported or assisted with various local initiatives including the building of a resource centre for the Zamdela Senior Citizen Club; building a centralised laundry facility servicing local clinics; and, continued support for vital health service provision to seniors and people with disabilities.
- Through environmental projects, 4,000 households have been educated on domestic waste management, additionally, 12 illegal dump sites have been rehabilitated, fenced and converted into food gardens.
- The Sasol for Good initiative, in partnership with The Grace Factory, donated maternity starter packs to the Fezi Ngubentombi Hospital, Angel Wings Centre for abused and abandoned babies, Dr Che Guevara Community Health Centre and the Bronkhorstspruit Hospital.

Figure 36: Social investment focus areas in Sasolburg & Ekandustria



Source: Sasol in Society Report 2022, p.86-92.