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Promoting market access for South African agriculture

POLICY BRIEF

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BRIDGING DATA GAPS IN THE AGRICULTURAL STATISTICS IN SOUTH AFRICA: **A META-ANALYSIS**

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EXECUTIVE SUMMARY

Within the context of agricultural research and policy development, the availability and quality of statistical data plays a crucial role in decision-making processes. However, challenges such as (i) data fragmentation; (ii) limited granularity; (iii) accessibility issues; and (iv) the underrepresentation of smallholder farmers should be mitigated. The challenges of data fragmentation include inability to integrate data from multiple sources resulting in the potential for biased research outputs. Moreover, limitations in drawing comprehensive conclusions due to scattered nature of data across different silos. Improving the granularity of data would enhance the precision of interventions. Additionally, ensure that regional and provincial challenges are adequately addressed. Improvement of access to quality data would allow smaller organizations and researchers to contribute to policymaking and foster a more inclusive sector. Investment in technological advancements would improve data collection accuracy and efficiency while creating a unified data management system that will eliminate fragmentation and ensure efficient information sharing across institutions. These efforts will enable South Africa's agricultural sector to better adapt to emerging challenges, promote sustainable practices, and contribute to long-term economic development. This policy brief outlines the current state of South Africa's agricultural statistics. Further, the policy brief outlines crucial strategies to enhance availability of quality, credible, and accessible data by policy-decision makers within the ecosystem.

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1. Importance of Agricultural Statistics

Agricultural statistics is essential for guiding policy decision makers in South Africa's agricultural sector. Accurate, quality, and credible data supports and informs cogent and coherent policymaking process. Policies' effectiveness and efficiencies can be evaluated by processing data on potential impacts, either after a policy is implemented (ex-post) or before a policy is implemented (ex-ante). Agriculture remains a vital component of South Africa's economy, contributing approximately 2.7% to the country's GDP[1] and serving as a significant source of employment and food security, particularly in rural areas[2]. Despite its importance, the sector faces numerous challenges that require informed decision-making supported by comprehensive and accurate agricultural statistics. A robust and inclusive statistical framework covering data collection methods and statistical reporting is essential for reflecting the conditions and needs of all stakeholders. From the large-scale commercial operations to the smallholder farmers who form the backbone of local, district and provincial food systems.

National and international statistical organizations invest considerable effort in producing valuable agricultural statistical data. This statistical data is typically collected to aid policymakers in decision-making or assess existing policies. However, there appears to be a disconnect between the information offered by statistical organizations and the needs of researchers and modellers that require specific type of data to deliver meaningful analysis to advise policy and decision makers. A significant hindrance to data-driven policymaking is that various institutions gather, organize, and share data sources in different places, leading to conceptual and practical challenges . Moreover, data are primarily available only as pre-formatted tables. They are not provided as a database for further synthesis. Moreover, data is unavailable and inaccessible for bulk data download, as depicted in **Table 1**. Against this background, this policy brief explored the state of agricultural statistics in South Africa. The main objectives are as follows: (i) to identify the key sources of agricultural data and highlight data gaps; (ii) analyse emerging trends; and (iii) propose opportunities for improving agricultural statistics to support policy and decision making.

2. South African Agricultural Data Sources

Table 1 below characterizes various data sources related to agriculture, their accessibility, and filtering capabilities. The list of agricultural data sources reveals key trends. Data sources such as government or private entities indicates the origin of the information, influencing the reliability and comprehensiveness. Types of organizations shape data priorities, affecting inclusivity and relevance for diverse stakeholders. Accessibility, whether open or restricted, impacts equitable participation in research and policymaking. Lastly, filter and download functions enhance the ease of extracting relevant data, facilitating targeted analysis and timely policy responses.

[1] Economic Review 2022-2023

[2] Kibuuka, E. Formulating a country's agricultural statistics strategy: The South African experience.

[3] Janssen, S., Andersen, E., Athanasiadis, I. N., & van Ittersum, M. K. (2009). A database for integrated assessment of European agricultural systems.

Table 1: Agricultural data sources

DATA SOURCE	ORGANIZATION	TYPE OF DATA	ACCESSIBILITY	FILTER & DOWNLOAD
STATS SA	Government Department	Agricultural Survey	Free	No
Department of Agriculture (DoA)	Government Department	Abstracts of Agricultural Statistics	Free	No
South African Grain Information Service[4]	Non-Profit Company	Grain data	Free	No
South African Revenue Services[5]	State-owned enterprise	Trade data	Free	Yes
JSE	Private owned	Market information	Free	No
Grain SA	Non-Profit Organisation	Crop Estimates	Free	No
Joburg Market	Municipal Company	Fresh produce data	Free	No
US Department of Agriculture	International	Production and Geospatial data	Free	Yes
UN Comtrade Database	International	Trade data	Free	Yes
Trade Map	Internation	Trade data	Free	Yes
FAOSTAT	International	Trade data	Free	Yes
Our World in Data	Internation	Agricultural statistics	Free	Yes
AMT	Private	Agric Market information	Subscription	No
SA Agricultural Machinery Association	Association	Machinery sales	Subscription	Yes
Hortgro	Association	Deciduous fruits statistics	Subscription	Yes
South African Avocado Growers' Association	Association	Avocado Production	Subscription	Unknown
Statista	Private	Agric statistics	Subscription	Yes
Quantec	Private	Industry Statistics	Subscription	Yes
South African Weather Services	State-Owned	Weather data	Free	No
UN Trade and Development	International	Trade data	Free	Yes

[4] South African Grain Information Service

[5] South African Revenue Services

Given the data sources presented in **Table 1**, it is evident that agricultural data is scattered across government departments, non-profit organizations, private entities, and international organizations. Another notable issue is accessibility. Most data sources, such as Stats SA, DoA, and Grain SA, offer free access to their datasets. However, crucial agricultural statistics from private organizations and associations such as AMT, Hortgro, and Statista require subscriptions. This subscription model limits the ability of independent stakeholders such as researchers, smallholder farmers, and non-profit organizations to utilize such data for informed decision-making and policy development. The need to sustain the collation and synthesis of data should be balanced with accessibility. barrier to Another critical challenge is the inability to filter and download functionalities in many South African data sources.

International data sources such as UN Comtrade, Trade Map, FAOSTAT, and Our World in Data provide robust features allowing data extraction and further analysis. In contrast, the Abstracts of Agricultural Statistics by the Department of Agriculture and agricultural surveys by Stats SA and other local sources lack these capabilities. This inability to extract data for further analysis complicates conducting targeted and timely analyses, making it harder for policymakers and researchers to focus on specific issues. The variety of data types offered by these sources, from agricultural surveys and crop estimates to trade data and machinery sales, provides a comprehensive overview of the sector. However, gaps remain in localized and smallholder farmer data, which is critical for addressing region-specific agricultural challenges. Government departments dominate basic agricultural statistics, while international platforms and private entities lead in advanced market information and geospatial data.

3. Meta-analysis of commonly cited agricultural data sources

The meta-analysis technique was adopted in this policy brief. Meta-analysis is a set of statistical techniques for combining data from independent studies to produce a single estimate effect. To assess commonly referenced agricultural data sources, 13 randomly selected policy briefs and seven opinion pieces on agricultural policy issues published between 2014 and 2024 were reviewed. These documents were chosen based on relevance to South African agriculture and data usage. We gathered sources from the Google search engine, most using keywords such as “policy briefs in South African Agriculture” and Opinion pieces in South African Agriculture”. The selected documents were analyzed to identify and count the frequency of references to various agricultural data sources, categorizing them by document type, year published, and sources cited regarding agricultural statistics presented in each document. Each title of the reviewed document has a hyperlink for reference purposes.

Table 2 below summarises the data sources referenced in the reviewed documents. The data reveals that the data sources reviewed in **Table 1** are frequently referenced. We analyzed frequently cited data sources in section 4 to understand this information.

Table 2: Cited Sources in reviewed policy briefs and opinion pieces regarding agricultural themes

TYPE OF DOCUMENT	TITLE	YEAR	CITED SOURCES - ON STATS
1. Policy Brief	Policy Brief: Performance on Agriculture Conditional Grants	2021	NT
2. Policy Brief	The Uncertainty in the South African Agricultural Labour Force: What Can Be Done?	2024	Stats SA
3. Policy Brief	Sustainable Agriculture for a Better Economy: Policy Planning and Public Financing	2017	DoA, Stats SA, and DWS
4. Policy Brief	Climate uncertainty and agricultural vulnerability in South Africa	2021	Stats SA
5. Policy Brief	Drought Policy Brief: Western Cape Agriculture	2018	BFAP, ITC, Quantec, and QLFS, DoA
6. Policy Brief	European Green Deal & South African Agriculture: The potential impact of reduced pest control options	2025	Hotgro, CGA, FAOSTAT, SATI, ICT Trade Map
7. Policy Brief	Gender, small-scale livestock farming and food security: Policy implications in the South African context	2015	FAOSTAT, Stats SA,
8. Policy Brief	A Just Transition Agenda for Food System Policymaking in South Africa: Learning from the Beef Sector	2024	DoA, Stats SA, Competition Commission, FAO, HSRC
9.Policy Brief	Investment in public agricultural research in South Africa: A critical review of the evidence	2019	DoA, Stats SA, ASTI
10. Policy Brief	High-Value Agricultural Exports	2023	FAOSTAT
11. Policy Brief	Functioning of the South African Tomato Value Chain: Production, Processing, Challenges, and Opportunities	2024	DoA
12. Policy Brief	Contextualizing the Ban on South African Vegetables by Namibia & Botswana Within the Prism of Regional Integration	2023	ITC
13. Policy Brief	Policy brief on the 2015/2016 drought	2017	SAWS, DWS, SARS, ITC, DoA, USDA, SAGIS, Stats SA
14. Opinion piece	AgriSA highlights positive developments in the agricultural sector amidst mixed fortunes in Q3 2024	2024	Stats SA
15. Opinion piece	Africa Agricultural Intra-Trade to Advance Food Security and Industrial Development – Challenges and Opportunities	2023	Tralac, UN Trade and Development
16. Opinion piece	Why isn't South Africa self-sufficient in wheat, and how might import dependency be reduced?	2024	Grain SA
17. Opinion piece	South Africa's new agricultural leadership should focus on getting things done, not designing new policies	2024	BFAP
18. Opinion piece	Contextualising South Africa's agricultural performance in the third quarter of 2024	2024	BFAP
19. Opinion piece	Raisin production forecast looking positive	2025	Raisins SA
20. Opinion piece	How beggar-thy-neighbour policy is a threat to SA's citrus industry	2024	CGA
21. Opinion piece	A glance at South Africa's agricultural growth performance in the first quarter of 2022	2022	Stats SA

Stats SA – Statistics South Africa, DoA – Department of Agriculture, DWS – Department of Water and Sanitation, BFAP – Bureau for Food and Agricultural Policy, ITC – International Trade Centre, Quantec – Quantec Research, QLFS – Quarterly Labour Force Survey, CGA – Citrus Growers' Association, FAO – Food and Agriculture Organization, SATI – South African Table Grape Industry, SASA – South African Sugar Association, HSRC – Human Sciences Research Council, ASTI – Agricultural Science and Technology Indicators, FAOSTAT – Food and Agriculture Organization of the United Nations Statistics, SAWS – South African Weather Service, SARS – South African Revenue Service, USDA – United States Department of Agriculture, SAGIS – South African Grain Information Service, Tralac – Trade Law Centre, and RSA-Raisins South Africa.

4. Analysis of cited data sources

After collecting the data, we further organized data to reflect the frequency of cited data sources. Table 3 shows the distribution of cited sources in policy briefs and opinion pieces from 2014 to 2024. The trends observed from reviewing policy briefs and opinion pieces on South African agriculture reveal a reliance on key data sources such as Stats SA and FAOSTAT but with distinct differences in how these sources are used across the two document types. Policy briefs that which focus on in-depth data-driven policy analysis rely heavily on Stats SA, cited seven times, followed by DoA (six citations); then FAOSTAT (four citations). This highlights the importance of national statistics and global agricultural data in informing policy makers and decision process. In contrast, opinion pieces are more diverse using data sources, with Stats SA mostly cited. CGA follows this trend with one citation. Industry-specific organizations such as Grain SA, Raisins SA, and CGA are more prevalent in opinion pieces. Focusing on specific sectoral insights and challenges. This suggests that the data sources are fragmented. It is unlikely to find data regarding a specific subsector in one data source; one must source data from an industry organization representing that subsector.

Table 3: Distribution of Cited Sources

CITED SOURCE	OPINION PIECE	POLICY BRIEF
Stats SA	2	7
DoA	0	6
FAOSTAT	0	4
ITC	0	3
ASTI	0	1
BFAP	2	1
CGA	1	1
Competition Commission	0	1
DWS	0	1
HSRC	0	1
Hotgro	0	1
ICT Trade Map	0	1
Quantec	0	1
SAGIS	0	1
SARS	0	1
SATI	0	1
SAWS	0	1
USDA	0	1
DWS	0	1
QLFS	0	1
Grain SA	1	0
RSA	1	0
Tralac	1	0
UN Trade and Development	1	0

International data, particularly from sources such as FAOSTAT, is key in contextualizing South Africa's agricultural performance within the global landscape. However, relying heavily on international data presents a potential risk of policy bias, mainly if errors occur during the data-capturing process. Misreporting or discrepancies in the measurement of agricultural production in other countries could distort the local farming landscape, leading to misguided policy decisions.

In highlighting the scarcity of organized data, specific organizations—such as BFAP, the Competition Commission, and HSRC—are cited in both opinion pieces and policy briefs, even though they are not primary data providers. These organizations typically source their data from industry groups, private organizations, and government departments, which limits their role as primary data generators. Given these data limitations, the recommendations in Section Four are deliberately framed to account for the challenges outlined in this policy brief.

4. Recommendations

- Establish a unified and accessible agricultural data platform to reduce fragmentation and duplication. This system should integrate data from government departments, private entities, and non-profit organizations, enabling seamless data sharing and consistency across sources.
- Balance the need for subscription to access data with the importance of data accessibility by various actors within the ecosystem without compromising sustainability of data collection.
- Improve localized data collection to address region-specific challenges, particularly for smallholder farmers. This includes incorporating socio-economic and demographic information to better represent agricultural stakeholders' diversity.
- Deploy artificial intelligence and geospatial tools and mobile-based surveys to improve data collection efficiency and accuracy. These technologies can capture real-time data, ensuring timely policy responses and interventions.
- Equip agricultural data sources with robust filtering and bulk download functionalities similar to international platforms such as FAOSTAT or Trade Map. This will facilitate targeted analyses and support evidence-based policymaking.
- Establish a coordinating and facilitation committee representing various actors within the ecosystem to complement and supplement data from quantitative observations. Moreover, mitigate duplication and errors from data collation and synthesis.