Wandile Sihlobo | Chief Economist | Tel: +27 12 807 6686 | Email: wandile@agbiz.co.za

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An embrace of scientific advancements in seed breeding and agrochemicals is vital for SA's agricultural progress

- As an export-oriented agricultural sector, South Africa must always pay attention to global developments and risks that could undercut its competitiveness in the world market. Undoubtedly, several environmental, social and political risks remain on top of mind for farmers and agribusiness leaders. But one issue that does not always get full appreciation is the contribution of the agricultural input providers – various agrochemicals and seed breeding. The lack of public focus mainly stems from the fact that consumers and policymakers primarily monitor the end products: the harvest size and, in animals, the health and expansion of herds.

- Rarely do we see a concerted broader public focus on assessing whether South Africa is keeping up with the times in registering and developing its seeds and agrochemicals. This needs to change. South Africa's agriculture has more than doubled since 1994 in value and volume when assessed through the data from the Abstract of Agricultural Statistics published annually by the Department of Agriculture, Land Reform and Rural Development.[1] At the centre of this agricultural progress, there are two major catalysts – first, expansion of export markets, thus creating a demand pull for products, and second, the early adoption of high-yielding seed varieties in crops, improvement of genetics in animals, and the use of agrochemicals to nurture the sector.

- South Africa was especially embracing technological advancement in ways that much of the African continent was not, thus setting the country apart from much of Africa in terms of its yields. This technological embrace primarily explains higher crop yields in South Africa compared to some of the neighbouring African countries with even better climatic conditions. A case in point is South Africa's embrace of genetically modified crops, whose adoption in the early 2000s saw maize and soybean yields improve notably over time, thus keeping the country a net exporter and boosting food availability domestically.

- With this encouraging track record in embracing science, a semi-arid country like South Africa should invest more resources to science in the present day where climate change and changing geopolitical environments have introduced new risks, and each country should strive to improve its food security. Fortunately, South Africa has a thriving private sector-led agricultural sector, where resources have been channelled into research and could continue being devoted to this effort. In fact, the

[1] This data can be accessed here: https://old.dalrrd.gov.za/Portals/0/Statistics%20and%20Economic%20Analysis/Statistical%20Information/Abstract%202023.pdf

government's spending in research and development has continued to fall, but this has been met with appreciable increase in research and development from the private sector.

- Still, the regulators in the country, specifically within the Department of Agriculture, Land Reform and Rural Development, need to share the urgency of the present moment and productively support technological advancement. Such support would come through constructively evaluating the various agrochemicals and seeds that the private sector presents and registering for use after being satisfied with the testing. The process, though, needs to be faster and agile and not be boxed down into the usual organized agriculture and government politics. Politics can be tolerable when addressing social issues, but science does not need cloudy judgment.

- What should be a priority is the health, improvement, sustainability, and competitiveness of South African agriculture. This is a prism through which the regulators should engage the input providers and private sector researchers. Equally, the organized agriculture groupings should ensure that their scientists are leading the engagements with the regulators and not muddy science with various issues they often raise with the government.

- A case in point of legislative work that needs to be revamped and modernised is Act 36 of 1947.[2] This is the Fertilizers, Farm Feeds, Seeds and Remedies Act 36 of 1947, which regulates the registration of fertilizers, farm feeds, sterilizing plants and certain remedies.

- Even countries that have always maintained a sluggish view of scientific progress in agriculture, like the European Union, are suddenly changing their approaches. For example, on 07 February 2024[3], the European Parliament issued a statement highlighting that they have adopted a "position for negotiations with member states on the Commission proposal on New Genomic Techniques (NGTs), which alter the genetic material of an organism, with 307 votes to 263 and 41 abstentions."

- The European Parliament further stated that "the objective is to make the food system more sustainable and resilient by developing improved plant varieties that are climate resilient, pest resistant, and give higher yields or that require fewer fertilizers and pesticides."

- Currently, in the EU, "all plants obtained by NGTs are subject to the same rules as genetically modified organisms (GMOs). Members of the European Parliament (MEPs) agree with the proposal to have two different categories and two sets of rules for NGT plants. NGT plants considered equivalent to conventional ones (NGT 1 plants) would be exempted from the requirements of the GMO legislation, whereas other NGT plants (NGT 2 plants) would still have to follow stricter requirements. MEPs want to keep mandatory labelling of products from both NGT 1 and NGT 2 plants."

- We draw from this statement that South Africa should also review its regulations on gene-editing matters to be at the forefront, as the country has been within acceptable health regulations in the past two decades. The goal should be to support a growing and competitive agricultural sector. From its roots, trade and scientific embrace have been at the centre of South Africa's agricultural progress, and

[2] More information about Act 36 can be accessed here: https://www.gov.za/sites/default/files/gcis_document/201505/act-36-1947.pdf
[3] The press statement by the European Parliament is available here: https://www.europarl.europa.eu/pdfs/news/expert/2024/2/press_release/20240202IPR17320/20240202IPR17320_en.pdf

this should be the running theme even today. Importantly, with the EU now seeing the light, South Africa and New Zealand are the only major agricultural producers in the world that regulate NGTs and new breeding techniques under GMO legislation. This needs to change.