# What can African countries learn from the changing EU and Chinese regulations on GE crops?

06 March 2023

**Wandile Sihlobo**
Chief Economist
+27 12 807 6686
wandile@agbiz.co.za

www.agbiz.co.za

One of the subjects we touched on last year was around the apparent change in sentiment about genetically engineered (GE) crops within the European Union (EU). The region has long restricted the importation and cultivation of GE crops, but in 2022, it approved certain varieties of maize, soybeans and rapeseed. Still, these had not gone through the authorization stages that would open the door for trade in the approved varieties. It was only on 22 February 2023 that the EU authorized imports of certain types of GE soybeans[1] and rapeseed[2] for use in food and animal feed for a period of 10 years. Still, this authorization does not include cultivation. These will mainly be imports, all subject to the EU's labelling and traceability rules. After roughly a quarter of a century of opposition to GE crops, this perhaps signals a move to wider future acceptance of the technology within the EU. This change in sentiment is probably underpinned by a growing desire for nations and regions to improve their food security conditions after the Russia-Ukraine war caused notable disruption in global grain and oilseed supplies.

Notably, the EU is not alone in the change of sentiments about GE crops. Last year, the Chinese National Crop Variety Approval Committee released two standards that cleared the path for cultivating GE crops in the country. This has been the missing piece in the regulations for China's commercial growth of GE maize and soybeans. The government has two steps in these regulations. These are a "safety certificate" and a "variety approval" before crops can be commercially cultivated. Various GE maize and soybean varieties have received the safety certificate since 2019. What has been missing has been the "variety approval". Now that the hurdle has been cleared, commercialization of GE crops in China is a real possibility.

Unlike the EU, China currently imports GE maize and soybean but prohibits domestic cultivation of the crops. The regulation change to encourage domestic cultivation would potentially lead to improved yields. Such improvement would align with China's ambition of becoming self-sufficient in essential grains and oilseeds in the coming years. There are specific targets for products like pork, for which the country wants to produce 95% of its consumption by 2025.

**Implications for Africa**

African countries should pay close attention to this wave of change in sentiment in key economic regions. Some African countries arguably closely followed the EU's approach to GE crops by prohibiting their imports and cultivation. With this new development in the EU and the authorization process completed, it is plausible that some African countries might consider evaluating their current restrictions, especially for vital staple grains such as maize. Kenya is one such country which seeks to clear white maize cultivation. But in February 2023, lobby groups took legal action to block GE white maize seeds planned for release to farmers by the Kenya Agricultural and Livestock Research Organisation (KALRO) in March and April 2023.[3]

[1] More information is available here.
[2] More information can be accessed here.
[3] More information is available here.

As we have argued several times, Kenya is one of the African countries that could benefit from GE seed cultivation as a major consumer of maize. Recently, Kenya has struggled with poor maize yields because of unfavourable weather conditions and crop disease. Kenya's 2022/23 maize import forecast is 700 000 tonnes. Yet, Kenyan consumers cannot access the abundant GE maize in the world market, let alone utilize crop technologies to reduce crop losses. With a change in regulations, Kenya would have been able to access more affordable maize from the likes of South Africa, the US and South American countries, directly benefiting consumers and supporting the struggling animal sector. The typical major suppliers of non-GE maize to Kenya have been Tanzania, Mexico and small volumes from Zambia and South Africa. Mexico has been importing large volumes of maize from the world market and even South Africa, so the country may not have large supplies for the export market.

Considering the global grains market changes, the most critical step in GE regulations, particularly in Africa, would be permitting cultivation. Of course, this typically introduces debates about the ownership of seeds and how smallholder farmers could struggle to obtain seeds and support inputs in some developing countries. These are realities that policymakers in African countries should manage regarding reaching agreements with seed breeders and technology developers but not close off innovation, as is currently the case. Technology developers also need to be mindful of these concerns when engaging various governments in African countries. This discussion should occur even sooner in Africa, as the geopolitical and climate change risks present the urgency to explore technological solutions to increase each country's agricultural production.

The only country that is an anomaly in Africa is South Africa, which began planting genetically engineered maize seeds in the 2001/02 season. Before its introduction, average maize yields were around 2,4 tonnes per hectare. This has now increased to an average of an expected 6,1 tonnes per hectare in the current production season of 2022/23. Meanwhile, the sub-Saharan African maize yields remain low, averaging below 2.0 tonnes per hectare. While yields are also influenced by improved germplasm (enabled by non-genetically modified biotechnology) and enhanced low and no-till production methods (facilitated through herbicide-tolerant GM technology), other benefits of GE crop technology include labour savings and reduced insecticide use as well as enhanced weed and pest control.[4]

Overall, with the African continent currently struggling to meet its annual food needs, using technology, genetically engineered/modified seeds, and other means should be an avenue to explore to boost production. The benefits of an increase in agricultural output are evident in Argentina, Brazil, the United States, and South Africa. The EU, which has arguably had a major influence on the general perception of GE crops in Africa, is changing its stance, at least on imports. This should serve as a signal to African countries. Still, their actions shouldn't aim to match that of the EU but go further and argue for access to these technologies to domestic farmers under fair agreements with the seed and technology developers, all of which can be negotiated at a country level.

## Weekly highlights

**South Africa’s 2022/23 summer crop first production estimates paint a better-than-expected outlook**

The start of South Africa's 2022/23 summer crop production season was challenging for farmers and agricultural role players because of excessive rains. Crop planting in various regions of the country was delayed by roughly a month, threatening yield prospects. But the

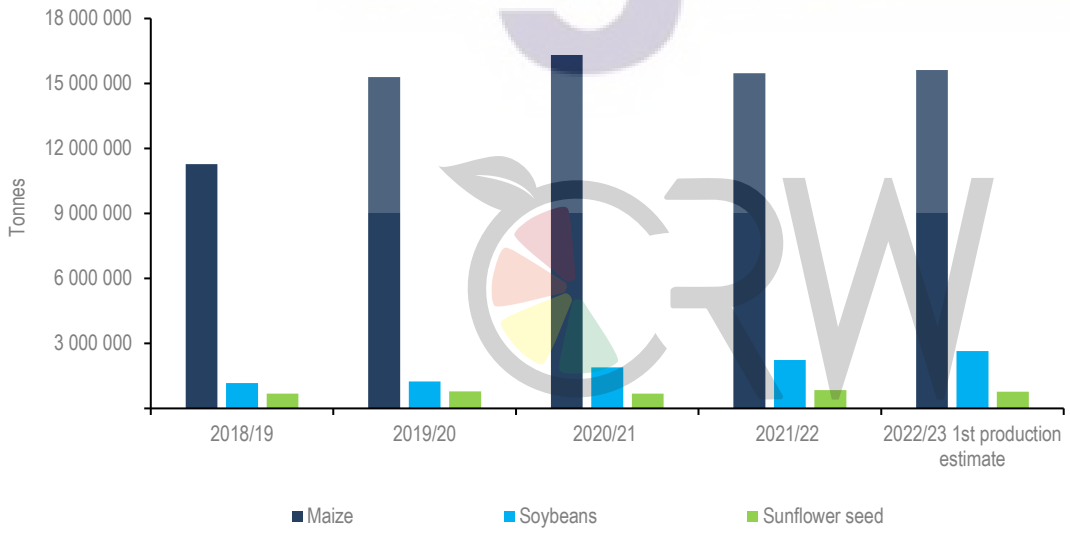
[4] More information about this issue is here.

warm weather at the end of January and much of February helped improve conditions on the farms. It thus eased concerns about the possibility of smaller yields due to excessive soil moisture. Moreover, the persistent load-shedding raised concerns that areas under irrigation could receive poor yields. Still, the return of rainfall, at a moderate pace, from mid-February provided a much-needed breather and improved crop conditions. Within summer crops, roughly 20% of maize and 15% of soybeans are produced under irrigation.

This sentiment of better agricultural conditions was confirmed by the data released by the Crop Estimates Committee (CEC) this past week. For example, South Africa's 2022/23 overall summer crop production is forecast at 19,3 million tonnes, up 3% from the previous season. If we consider the large crops like maize, soybeans and sunflower seed, production is forecast at 15,6 million tonnes (up 1% y/y), 2,7 million tonnes (up 19% y/y), and 775 260 tonnes (down 8% y/y), respectively. The expected improvement in the maize harvest is on the back of expected better yields as the area plantings are down marginally from the 2021/22 season. Meanwhile, the robust forecast increase in soybeans results from both expected large yields and an increase in planted area. The fall in the sunflower seed production forecast mirrors the reduced planted area and yields in some areas. Other small crops such as sorghum and groundnuts have a reasonably large expected harvest.

Admittedly, it is still early for one to be entirely sure about the size of South Africa's summer crops, with nine more monthly crop forecast updates to follow. Still, these data provide comfort that the country will likely have sufficient supplies for the domestic consumption of major crops such as maize and soybeans. These crops are crucial for food security and livestock feed. The crop is now at pollination stages in some regions of the country, and if the weather conditions remain favourable, the yields stand to improve even further. Still, one will have to keep a close eye on the irrigation areas and the pace of interventions to be made by the Department of Agriculture, Land Reform and Rural Development on energy challenges in the sector.

**Exhibit 1: South Africa's major summer grain and oilseeds production**




Source: CEC and Agbiz Research

**South Africa's agricultural jobs down 1% y/y in Q4, 2022**

South Africa's agricultural sector has had a broadly better-than-expected performance in 2022. The exports reached a record US$12,8 billion, and agricultural machinery sales, such as tractors, were at the highest level in 40 years. This materialised despite the range of challenges that faced the sector, such as excessive rains at the start of the 2021/22 summer

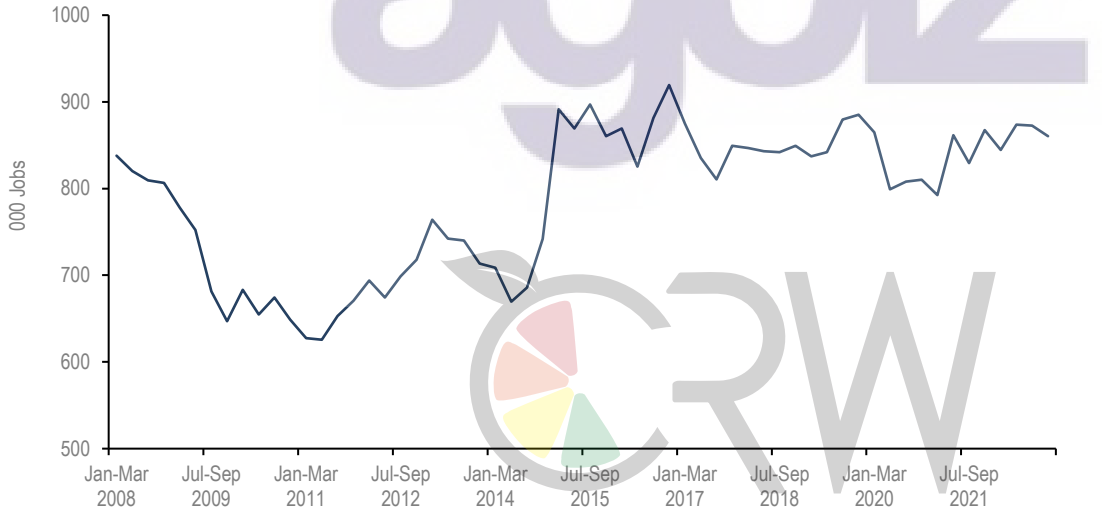
crop season, disease outbreaks in the livestock industry, trade barriers in fruits and wool, and logistical challenges at our ports, particularly in the first half of 2022.

The data released this past week by Statistics South Africa also paints a broadly comforting picture, showing that in the last quarter of 2022, there were about 860 000 people employed in primary agriculture, which is well above the long-term agricultural employment of 780 000. Admittedly, some of the factors we mentioned did weigh on the sector as employment fell by 1% yearly and roughly the same rate from the third quarter of the year. Except for summer crops and forestry, the decline in employment was in all subsectors with a significant decline in the livestock sector, which underscores the animal disease challenge we noted above. Furthermore, the higher feed cost was, and remains, an additional challenge for the livestock industry, along with a decline in red meat prices, all of which add pressure on farming businesses.

From a regional perspective, except for the Western Cape, Northern Cape and Free State, all provinces registered a mild decline in agricultural employment in the last quarter of 2022 compared with the corresponding period in 2021.

While the previous years have delivered solid employment conditions in the sector, the outlook remains uncertain. The farming business is challenged by persistent load-shedding, which has increased input costs as some seek various means of energy generation that require extra capital. Moreover, the recent increases in minimum wages are a concern, specifically for the fruit industry. The farming input costs, such as fertilisers and agrochemicals, although having moderated somewhat from levels we saw in much of last year, remain fairly higher. All these will be added pressures on the farmers that could weigh on employment conditions.

**Exhibit 2: South Africa's agriculture employment**




Source: Stats SA and Agbiz Research

## Data releases this week

As always, we start the week with a global focus; the United States Department of Agriculture (USDA) will release its **World Agricultural Production** data on Wednesday. This is a monthly report on crop acreage, yield and production in major countries worldwide. Moreover, the USDA will release its **U.S. Weekly Grains and Oilseeds Exports** on Thursday.

On the domestic front, on Tuesday, Statistics South Africa will release the **Gross Domestic Product (GDP)** for the last quarter of 2022. In the third quarter of 2022, South Africa's

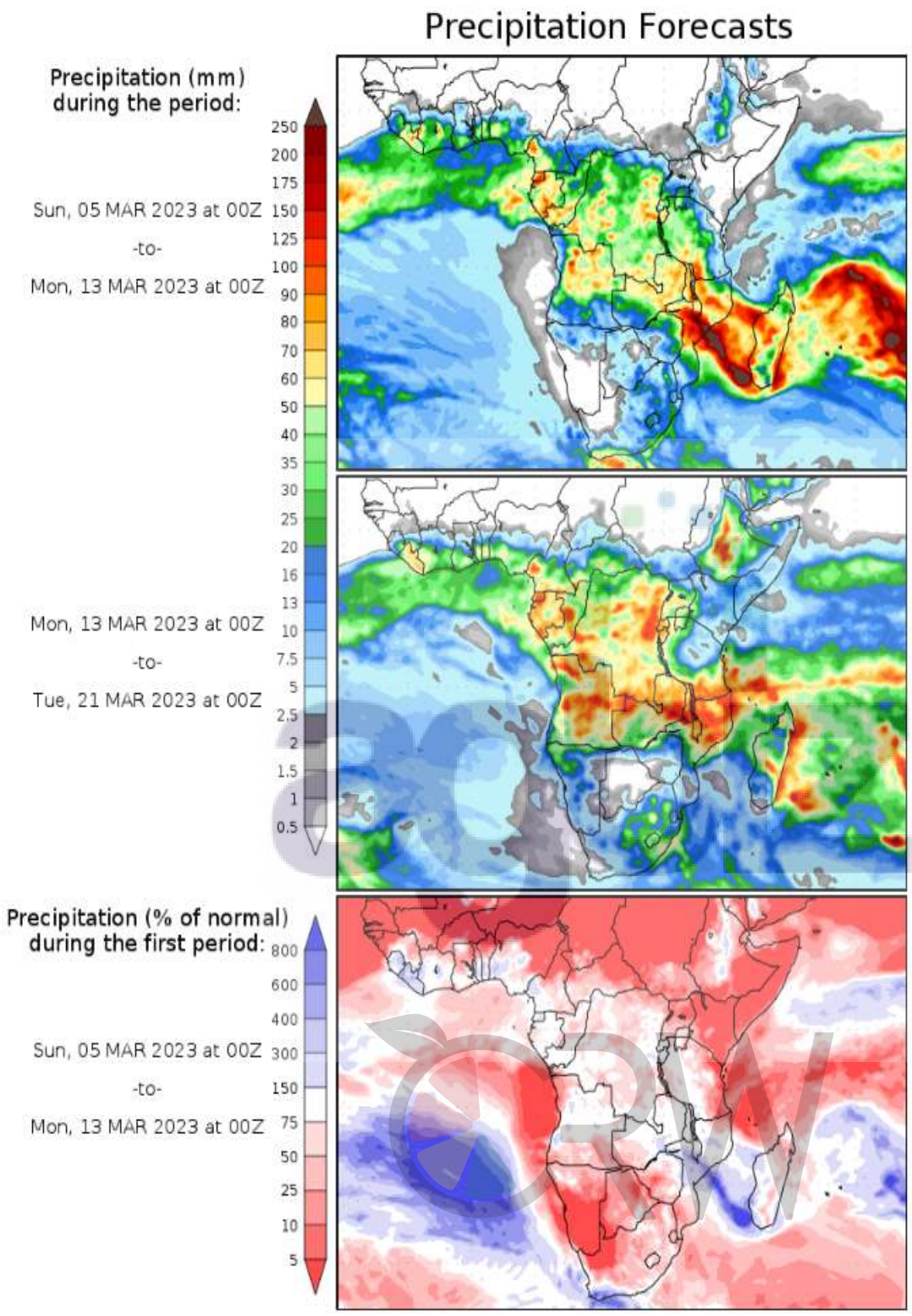
agricultural gross value added expanded by 19,2% quarter-on-quarter (seasonally adjusted). The better yields of some field crops (mainly summer grains and oilseeds) and horticulture, combined with relatively higher prices, specifically grains and oilseeds, underpin this improvement. Also worth noting is that the summer grains harvest, typically in the year's second quarter, was delayed by roughly a month and fell into the third quarter this year. Still, we suspect that the annual figure for the sector will show mild contraction.

On Wednesday, SAGIS will release the **Weekly Producer Deliveries** data for 03 March. In the previous release of 24 February, about 14,5 million tonnes of maize had already been delivered to commercial silos out of the harvest of 15,5 million tonnes. In the same week, about 2,2 million tonnes of soybeans had already been delivered to commercial silos, roughly the same size as the harvest for the season. Moreover, 842 684 tonnes of sunflower seed had already been delivered on the same day out of the harvest of 845 550 tonnes. The 2022/23 wheat producer deliveries amounted to 1,9 million tonnes in the same week, out of the expected harvest of 2,1 million tonnes.

On Thursday, SAGIS will publish the **Weekly Grain Trade** data for 03 March. In the previous release on 24 February, which was the 43rd week of South Africa's 2022/23 maize marketing year, the weekly exports amounted to 112 882 tonnes. About 44% of this volume went to Japan, 22% to South Korea, 16% to Mexico and the rest to the Southern Africa region. This brought the total 2022/23 exports to 2,8 million tonnes out of the seasonal export forecast of 3,3 million (slightly down from 3,7 million tonnes in the past season due to an expected reduction in the harvest).

South Africa is a net wheat importer, and 24 February was the 21st week of the 2022/23 marketing year, with 7 663 tonnes all from the US. South Africa's 2022/23 wheat imports currently stand at 559 432 tonnes. The seasonal import forecast is 1,6 million tonnes, roughly unchanged from the previous season. The major wheat suppliers in the 2021/22 season are Argentina, Lithuania, Brazil, Australia, Poland, Latvia and the U.S. If one looks into South Africa's wheat import data for the past five years, Russia was one of the major wheat suppliers, accounting for an average share of 26% yearly. Argentina and Brazil replaced this in the 2021/22 season. We will closely monitor Russia's presence in the 2022/23 season, as the country is again one of the major wheat suppliers to South Africa.

**Exhibit 3: South Africa's precipitation forecast**




Source: George Mason University (wxmaps)

*The weather forecast for the next two weeks shows prospects of light showers over most regions of South Africa.*

*While this is not an ideal time for increased rainfall over the summer crop regions of South Africa, the forecast light showers will likely be supportive of crop conditions.*

*Meanwhile, in the Western Cape, the forecast rains this week could slightly delay grape harvesting in areas that have started.*