

23 October 2023

China moves closer to the cultivation of GMO maize and soybean seeds

- A media article from Reuters this past week noted that China is closer to commercializing genetically modified maize and soybeans. ¹ It stated that "China has approved 37 genetically modified maize seed varieties and 14 genetically modified soybean varieties, taking it close to commercial planting of GMO maize and soybeans." This is not the first time China has made headlines about its path towards the potential commercialization of genetically modified maize and soybeans for domestic cultivation. In June 2013, the Chinese National Crop Variety Approval Committee released two standards that cleared the path for cultivating genetically modified crops in the country. This was the missing piece in the regulations for the commercial production of genetically modified maize and soybeans in China, as the government has two steps in these regulations, namely, a "safety certificate" and a "variety approval" before crops can be commercially cultivated. ²
- Various genetically modified maize and soybean varieties have received the safety certificate since 2019, and the missing piece was the "variety approval", which was approved in June 2022. Thus, at the time, we already believed that the full approval and commercialization of genetically modified crops in China was a real possibility. The news this past week that the Chinese Ministry of Agriculture and Rural Affairs approved further varieties of genetically modified maize and soybean seeds further underscores China's determination to plant these varieties. However, commercial cultivation is not yet approved. The timing for wide-scale commercial release is still unclear, although some speculate it could be closer as China aims to boost its crop yields as part of the food security drive. The area plantings for the recently approved varieties are still reasonably small, estimated at 267 000 hectares. ³
- China has no aversion to genetically modified crops. Currently, China imports genetically modified maize and soybeans but prohibits domestic cultivation of the crops, and the current regulatory developments signal a potential change. ⁴ The change in regulations would potentially lead to an improvement in yields.
- As we argued in this note last year, China's maize yields are not particularly poor, although the country has not approved the genetically modified seeds for commercial release. In its current production methods, China's maize yields are comparable with South Africa, the United States, Argentina and Brazil, which have long adopted genetically modified seeds. ⁵ Thus, we suspect adopting genetically modified seeds will further lift the yields. Furthermore, in countries like the United States,

¹ The article is available [here](#).

² We gained this insight in an article from "China Dialogue", published [here](#).

³ These estimates are highlighted in the article that is accessible [here](#).

⁴ More on Chinese GM crops matters covered in this [article](#).

⁵ The crop yields data is accessible [here](#).

Brazil and Argentina, amongst others, genetically modified seeds have had additional benefits such as lowering insecticide use, more environmentally friendly tillage practices and crop yield improvement.⁶

- If our future crop yield improvement assumption holds, then China's maize and soybean import dependence could lessen. China is one of the world's largest maize and soybean importers. The country accounted for 11% of global maize imports and 62% of the world's soybean imports in the 2022/23 marketing year. The forecast volumes for the 2023/24 marketing year remain roughly unchanged. Therefore, given China's significance in imports, an improvement in domestic production of maize and soybeans in future would have notable implications for global grains trade and prices. We think a reduced volume of China's soybeans and maize imports in the global market would mean downward pressure on global prices. However, we do not foresee this happening within the next few seasons as planting these newly approved varieties of genetically modified maize and soybean seeds is still constrained in a small area as it is a trial.

Implications for the African continent

- As we have argued in our notes about this subject in the past, beyond the global price implications, African countries, which have long resisted cultivating and importing genetically modified crops, should keep a close eye on these developments. South Africa is the only exception that has embraced genetically modified crops since the 2001/02 season. The country has also enjoyed improvements in yields and is now a leading producer of grains in the region. For example, according to the data from the International Grains Council, South Africa produces about 16% of sub-Saharan maize, utilizing a relatively small area of an average of 2.5 million hectares since 2010. In contrast, countries such as Nigeria planted 6.5 million hectares in the same production season but only harvested 11.0 million tonnes of maize, equating to 15% of the sub-Saharan region's maize output. Irrigation has been an added factor in South Africa, but not to a large extent, as only 10% of the country's maize is irrigated, with 90% being rainfed, making it similar to other African countries.
- Notably, although the yields are also influenced by improved germplasm (enabled by non-genetically modified biotechnology) and improved low and no-till production methods (facilitated through herbicide-tolerant genetically modified technology), other benefits of genetically modified seeds include labour savings and reduced insecticide use as well as enhanced weed and pest control. Hence, with the African continent currently struggling to meet its annual food needs, using technology, genetically modified seeds, and other means should be an avenue to explore to boost production.
- Many African governments should reevaluate their regulatory standards and embrace technology. Of course, this typically introduces debates about the ownership of seeds and how smallholder farmers could struggle to obtain seeds in some developing countries. These are factors that policymakers in African countries should manage regarding reaching agreements with seed breeders and technology developers but not closing off innovation. The technology developers also need to be mindful of these concerns when engaging various governments in African countries.

⁶ The paper is available [here](#).

Implications for South Africa

- South African farmers and agribusinesses should also closely monitor the developments in China. The increase in production in other parts of the world, specifically in maize, where South Africa is a net exporter, could bring increased competition and downward pressure on prices in the medium term. Some of South Africa's key maize export markets are South Korea, Japan, Taiwan and Vietnam, and all have proximity to China. If China progressively increases production and becomes a consistent net exporter of maize, South Africa would have to explore markets elsewhere, which would be a challenge. China has increasingly become a noticeable market in South Africa's maize exports and hopes that the country could be a long-term export market. Thus, improvements in its domestic maize and soybean production would have a consequential impact on South Africa's export drive. Admittedly, it is still too early for any haste decisions. For now, all we can do is watch closely the full commercialization date and review possible options at such a stage.

WEEKLY HIGHLIGHT

South Africa's consumer food inflation slightly moderated in September 2023

- South Africa's consumer food inflation slightly slowed to 8,0% in September 2023 from 8,2% in the previous month. The product prices underpinning this deceleration are mainly bread and cereals; oils and fats; sugar, sweets and desserts; and vegetables. Our view of the path forward remains unchanged from what we have consistently communicated over the past few months.
- While there are renewed risks in global and agriculture, such as India's decision to ban specific categories of rice exports and the Black Sea Grain Deal Initiative that facilitated grains and oilseeds exports from Ukraine terminated, and domestically, the avian flu, we are still optimistic that South Africa's consumer food inflation will continue to slow throughout the year into 2024.
- The spreading of avian influenza has mostly affected Gauteng, Mpumalanga, Free State, Limpopo and North West. Over a hundred primarily commercial facilities have reported avian influenza cases. There are reported losses in parental stock for breeders of layers and broilers.
- In response to the challenge, the Department of Agriculture, Land Reform and Rural Development, along with poultry producers and retailers, are exploring a range of instruments to respond to the current crisis. These include the containment measures currently being implemented by industry and the government to control the spread of the disease. Regarding the egg supply constraints, the industry is working on importing fertilized eggs to rebuild the parental stock lost from this disease and import table eggs (powder and liquid eggs that would help in the baking process and free the whole eggs for human consumption). There are also ongoing processes about the possible vaccinations to curb the spread of the disease.

- There is anecdotal evidence of various retailers that have adjusted egg prices significantly to manage the demand. Such price adjustments in a short period have raised concerns about the possible impact of the current avian influenza on food inflation. What will matter a lot is the duration of these higher prices, which we doubt will persist for an extended period if the interventions of imports and control of the spread of the disease we listed above succeed. The current increases could be a temporary blip, which will likely show on one-monthly inflation figures, and the trend would then continue to the expected path we were on before, which is deceleration or sideways.
- Also worth noting is that eggs have a lower weighting within the food inflation basket, at 0.4%, which means its impact may not be as pronounced in an overall inflation figure. Poultry products, which have a slightly higher weighting of 2,09%, have not increased at the retail level as significantly as eggs. Given that the poultry products supply is still relatively good and various trade measures are under consideration, there should not be supply constraints over the foreseeable future.
- Beyond the poultry developments, the products that could underpin the slowing food inflation trend will likely remain similar to those in the past few months, specifically grain-related products, fats and oils and fruit and vegetables.
- Within the vegetable side, however, we may see temporary price increases in potatoes due to quality issues and lower volumes in some regions. Such price shocks are already visible in some Fresh Produce Markets nationwide. Given the anticipated demand and potential slight price increase, the meat price trend could slightly change ahead of the festive season.
- Regarding the "bread and cereals" product prices, admittedly, the Black Sea Grain Deal challenges and India's rice exports ban are an upside price risk. With South Africa importing a million tonnes of rice and similarly exposed to wheat imports, the disruption in trade of these commodities and the length of it could have implications on global price and, ultimately, South Africa's "bread and cereals" component of the food inflation basket. Still, we have not seen material price changes in the grain prices so far, although there were price reactions after the announcements of both the Black Sea Deal and the India rice exports ban. Hence, we expect the prices of grain-related products in the inflation basket to maintain a softening path.
- We had feared that the "oils and fats" products prices would start to increase and follow the global price trend, which showed an uptick in July. However, the recent data from the FAO shows continuous moderation. For example, in September 2023, the FAO's vegetable oil price index was at 121 points, down 4% from August 2023 and 21% y/y. The decline in the global prices of palm, sunflower, soybean and canola oils underpinned this.
- Beyond the global dynamics, South Africa has a favourable agricultural season. For example, the 2022/23 maize harvest is estimated at 16,4 million, 6% higher than the 2021/22 season's harvest and the second-largest harvest on record. Soybean harvest could reach a record 2,8 million tonnes. Other field crops and fruits also provided decent harvests. These increased supplies support the slowing food inflation view we expressed.
- Also crucial for the food inflation outlook going into 2024 is highlighting that El Nino's forecast in the upcoming 2023/24 summer crop season is another aspect to keep an eye on, although we remain

optimistic that it will have a mild impact on the sector and thus keep production at decent levels and, by extension, sustain moderating food prices. There are good soil moisture levels across South Africa following several rainy seasons. Furthermore, the weather forecast remains reasonably favourable for the year, with El Nino expected to intensify from January 2024.

- Be that as it may, the prices of these products are influenced by global developments as we are an open economy interlinked to the world markets. So, monitoring global agricultural developments, geopolitics, and energy markets remains vital.

Exhibit I: South Africa's consumer food inflation



Source: Stats SA and Agbiz Research

WEEK AHEAD

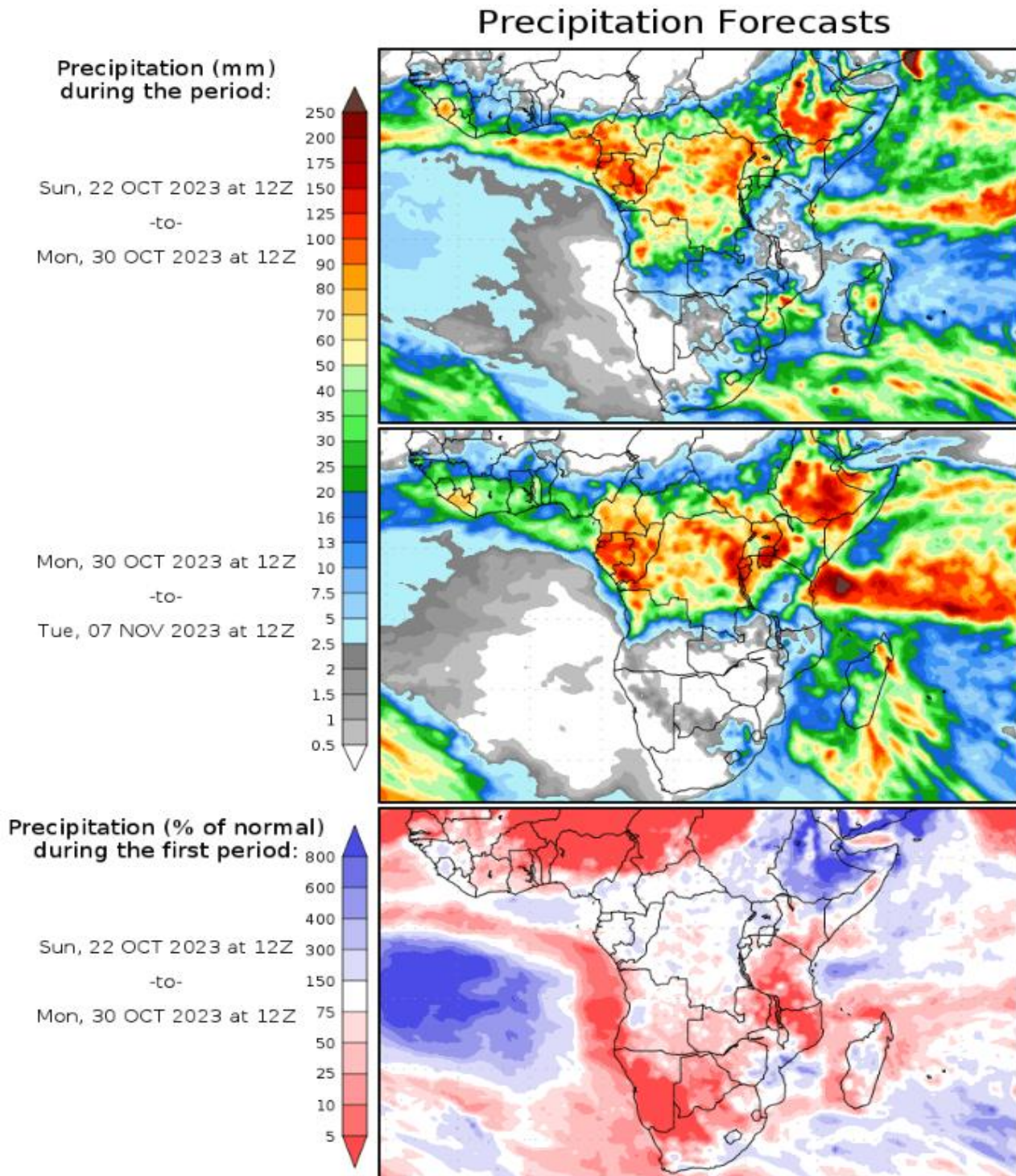
What we are watching this week

- This is a data-packed week. We start a global focus, and today, the United States Department of Agriculture (USDA) will release its weekly update of the **US Crop Progress Report**. The harvest of maize and soybeans is in full swing in several States, and almost half of the planted area has been harvested. Regarding crop conditions, on October 15, about 53% of the planted maize crop was rated good/excellent, which is unchanged from the previous week and the same rating as last year in the corresponding week. Regarding soybeans, about 52% of the crop was rated good/excellent, down from 57% in the same week in 2022. These downgrade in crop quality reflects the effects of the high temperatures that several grains and oilseed-producing regions of the US experienced in recent months. Moreover, USDA will release the **Grains and Oilseeds World Trade** data on Thursday.
- On the domestic front, on Wednesday, SAGIS will release its weekly **South Africa's Grains and Oilseeds Producer Deliveries** data for October 20. In the previous release on October 13, South Africa's 2023/24 maize producer deliveries were about 54 663 tonnes. This placed the 2023/24 deliveries at 14,3 million tonnes out of the expected harvest of 16,4 million.
- On October 13, the soybean deliveries were about 2,7 million tonnes of soybeans out of the expected crop of 2,8 million tonnes. On the same day, sunflower seed producer deliveries amounted to 711 230 tonnes out of the expected harvest of 711 488 tonnes.
- On Thursday, South Africa's Crop Estimates Committee will release its **ninth production forecast for summer field crops for 2023**, as well as the '**intentions of farmers**' to plant summer grain crops for 2024. Our focus on this data will be on the intentions to plant data, as we expect the 2022/23 season production figures to remain unchanged from the previous reporting. Furthermore, the Crop Estimates Committee will release its **third production forecast for winter cereals in 2023**. These figures are crucial as they will provide a guidance about the potential crop size since last month's destructive floods in the Western Cape, a major producing province.
- Also on Thursday, SAGIS will publish its weekly **South Africa's Grains and Oilseeds Trade** data for October 20. In the previous release on October 13, the 24th week of the 2023/24 marketing year, South Africa exported 83 721 tonnes of maize. Of this volume, 63% was exported to Vietnam and the balance to the neighbouring African countries. This placed South Africa's 2023/24 maize exports at 2,06 million tonnes out of the seasonal export forecast of 3,33 million.
- South Africa is a net wheat importer, and October 13 was the second week of the new 2023/24 marketing year. There were weekly import volumes of 72 635 tonnes from Lithuania, Poland, and Russia. South Africa's 2023/24 wheat import forecast is 1,6 million tonnes, down from 1,7 million tonnes because of the expected large domestic harvest.
- On the same day, Statistics South Africa will release the **Producer Price Index (PPI)** data for September 2023

South Africa's Precipitation forecast

- After relatively higher temperatures over the past couple of days, the summer crop-growing regions of South Africa could receive rainfall this week, which bodes well with the planting activity currently underway. The Western Cape could see drier weather, much needed after the recent floods.

Exhibit 2: South Africa's precipitation forecast



Source: George Mason University (wxmaps)