Rising agricultural input costs, a growing concern for crop producers

A brief note on the extent of agricultural input cost increases through 2021 and the associated impact on profitability in the field crop sector

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14 December 2021

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DESPITE PERSISTENTLY HIGH AGRICULTURAL COMMODITY PRICES, PRODUCER MARGINS MAY COME UNDER INCREASING PRESSURE IN THE CURRENT SEASON AS A RESULT OF SPIRALLING INPUT COSTS

Soaring fertiliser and other agricultural inputs costs around the globe has been a concern for months and there are no signs of abating yet. As costs continue to rise, producer margins are squeezed, despite persistently high agricultural commodity prices and consequently also food prices for consumers across the globe.

In November 2021, various agricultural input product prices reached unprecedented heights, underpinned by a multitude of factors that combined to create a perfect storm. Key factors driving costs globally include:

- High raw material costs and shortages of products such as natural gas, which is the main feedstock in many nitrogen fertilisers;
- Limited fertiliser supply and rising demand due to high commodity prices, which resulted in area expansions;
- Covid-19 related slowdown in production, due to sub-optimal capacity utilisation;
- Logistical constraints and bottlenecks globally, along with increasing freight rates (Grain SA, 2021)

An already precarious situation was further exacerbated by nutrient export restrictions from China and Russia, as well as the impact from hurricane Ida, which halted fertiliser production and transport in Louisiana (Bloomberg, 2021).

Domestically, the impact of these global factors is already visible in input markets. Numerous product prices have increased by around 50% from 2020 (year-to-date with projections for December 2021). Figure 1 illustrates the year-on-year percentage change for key agricultural inputs in South Africa from 2020 to 2021 (calendar year averages). The weighted cost for fertiliser (weighted product mix for nitrogen, phosphorus and potassium) is estimated to increase by 49% in 2021 relative to 2020, with urea and LAN28 projected to increase by 54% and 43% respectively, MAP by 52% and potassium by 39%. The cost for herbicides is expected to increase by 29%, with increasing concern that high prices will continue into 2022 and that the availability of certain products will become a real challenge. The cost of fuel is projected to increase by 17%, with administered costs such as wages and electricity increasing on average by 16%.

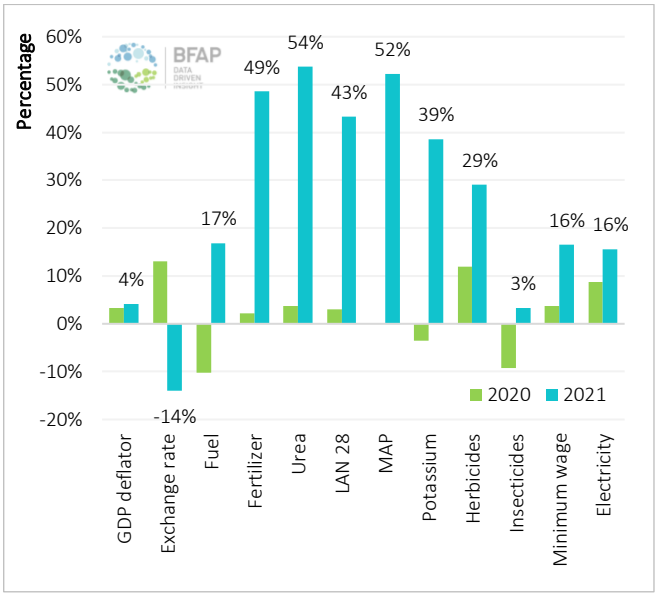

Figure 1: Agricultural input cost inflation: Calendar y-o-y percentage change from 2020 - 2021
Source: BFAP & Grain SA, 2021

Generally, these increases in agricultural input costs will affect producer margins across all agricultural sub-sectors. While higher feed grain prices have resulted in substantial feed cost increases for animal producers, this analysis is focussed on field crop producers, who procure a substantial share of inputs for planting purposes once a year. Here, the challenge is to determine the magnitude of these impacts on individual producers, as they will vary significantly based on

when agricultural inputs were purchased in 2021. Figure 2 supports this argument by presenting the monthly year-on-year percentage change for key input costs. The graph shows that in November 2021, compared to the same period in 2020, a producer will pay:

- 116% more for a combined fertiliser cost
- 130% more for urea, 114% for LAN28, 72% for MAP and 125% more for potassium
- 38% more for diesel
- 66% more for herbicides and 24% for insecticides. For glyphosate products, the international price has increased by 193% in October with domestic prices increasing by 165%

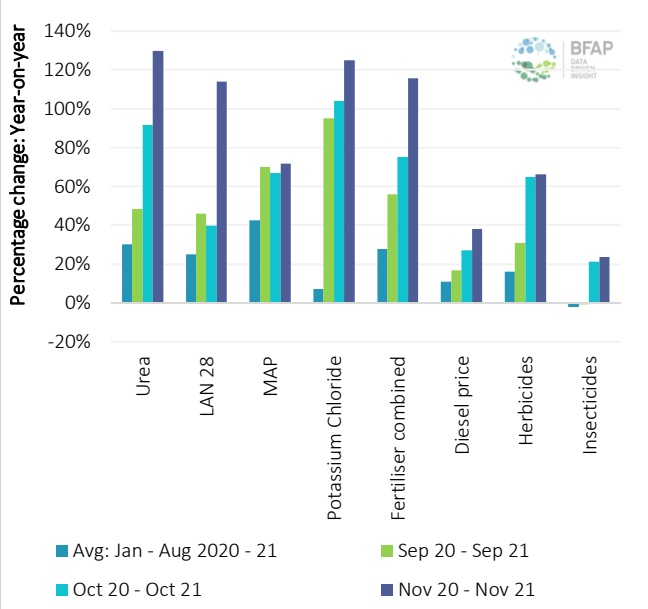

Figure 2: Agricultural input cost inflation: Monthly y-o-y percentage change from 2020 to 2021

Source: BFAP & Grain SA, 2021

To illustrate the impact of when a producer purchased inputs in 2021, Figure 3 presents a gross margin sensitivity analysis for maize producers in the eastern and western maize producing regions. February is considered an important month for input acquisition for summer crop producers, although it cannot be generalised. The graph shows that the gross margins of producers who purchased fertilisers, chemicals and fuel in November 2021 will decrease on average between R2 600 to R3 700 per hectare in 2022 compared to producers who purchased these inputs in February 2021. The total direct costs for the 2021/22 production season will increase on average by 47% if these inputs were purchased in November 2021. In this scenario, the break-even yield for a Northern Free State producer will need to increase from 3.0 tons per hectare (under normal circumstances) to nearly 4.0 tons per hectare.

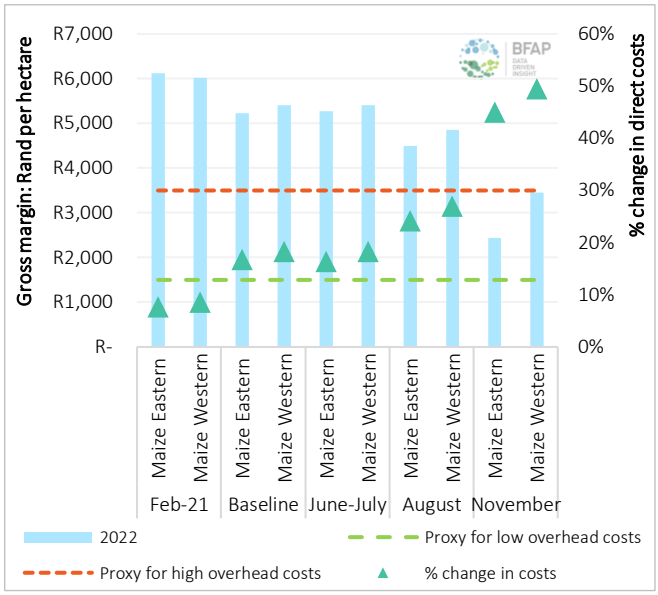

Figure 3: Maize: Cost increase & impact on gross margin in 2022 depending on the month when fertiliser, chemicals & fuel were purchases

Source: BFAP, 2021

The impact on gross margins will be more severe for production systems associated with intensive input systems such as vegetables and crops produced under irrigation. These input cost dynamics also have the potential to influence decision-making at farm-level, with possible shifts in area under production, both internationally and domestically. The question is what will farmers ultimately do? Will northern hemisphere producers postpone fertiliser application or will producers shift to other alternatives such as soybeans, which are considered less input intense? Although uncertainty remains regarding the magnitude of potential shifts in area under production and how it could influence market

dynamics, Bloomberg's Green Markets are projecting a switch of 2.5 million acres (+- 1 million hectares) away from maize to soybeans in the United States alone. The United States Department of Agriculture expects the area under both maize and soybeans to increase, though the magnitude of increase is larger for soybeans.

For upcoming seasons (such as the 2022 winter rainfall production season), recent projections from the World Bank paint a bleak picture with respect to energy and fertilisers, which are expected to remain high through 2022, with some declines only anticipated from 2023 onwards, under the assumption that logistical and supply constraints ease (Figure 4 and Figure 5). The recent depreciation in the Rand against the US dollar will further elevate domestic fertiliser, fuel and chemical prices due to South Africa's dependence on imports.

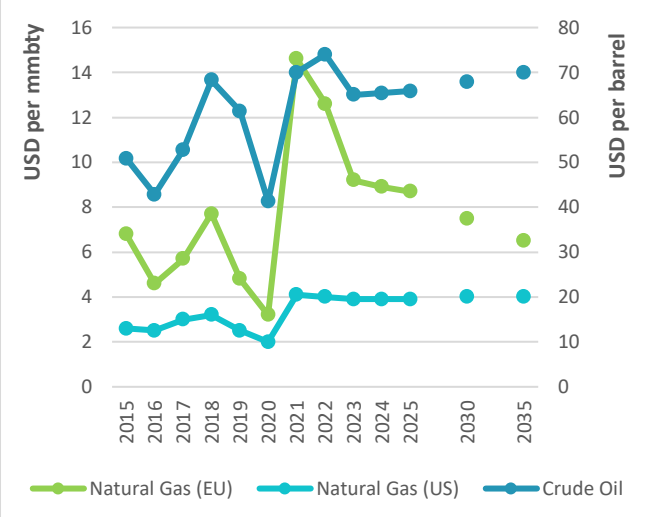

Figure 4: International energy price outlook
Source: World Bank, 2021

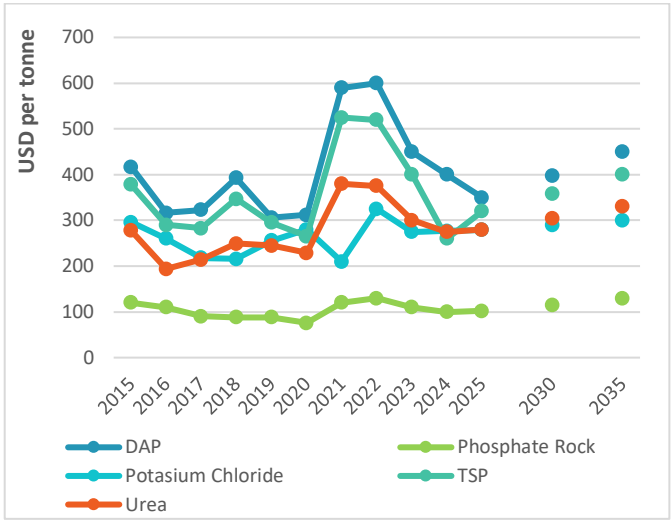

Figure 5: International fertiliser price outlook
Source: World Bank, 2021

IN SUMMARY…

… 2021 was an exceptional year for field crop producers, with high agricultural commodity prices supporting margins. The sharp increases in input costs over the past few months have however raised concern about prospects for 2022, despite output prices likely remaining high. Projections from the World Bank suggest that the factors driving higher input costs are likely to persist into 2022, with reductions only expected from 2023 onwards. In South Africa, where the bulk of imports are imported, continued weakness of the Rand could exacerbate an already precarious situation.