

Source BI - Juan Winter & Dirk Odendaal

Steering a data-driven course through choppy waters



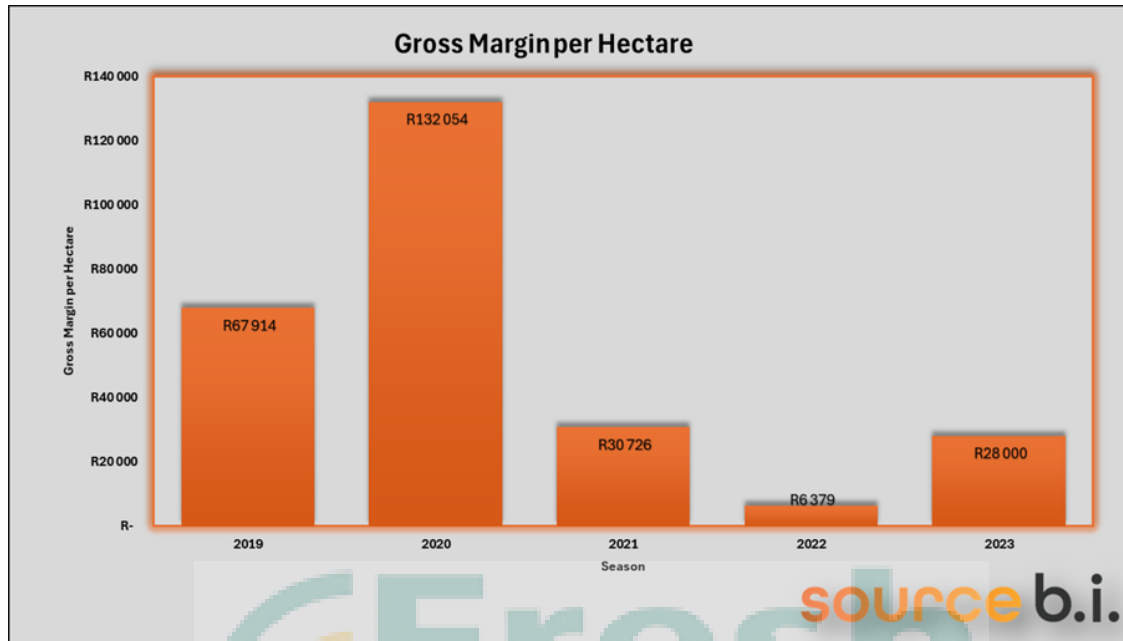
Source BI analyses data from many thousands of hectares – over 20,000 hectares of citrus, 5,500 ha of avocados and 9,500ha of macadamias – to determine the competitiveness of farms through benchmarking with their peers and the exact breakeven point of every farm.

"South African farmers, especially on citrus, are world leaders in how closely they look at their data down to cultivar level," notes Dirk Odendaal (*right*), agricultural economist at Tzaneen-based Source BI. The agricultural business intelligence analyst guides producers' and packhouses' decision-making to reduce risk: at what point will a new orchard reach breakeven point? Which cultivar will fare best financially in a particular region? Packing for which market segment would make best sense at a certain time?

In its 13 years of doing this for citrus and avocado, later adding macadamia, Source BI has recognised cycles and patterns. Besides South Africa, they've been active in Mozambique and Malawi, this year starting on Singaporean citrus production.

The Source BI platform shows producers a five-year average of their

competitiveness on historic yield and ability to produce a high quality fruit. "Our work is to identify the drivers of competitiveness on a specific farm, as benchmarked to other farms in the same area or across the country," explains Juan Winter, Source BI managing director.



Gross margin for the average citrus producer in northern South Africa, 2019 to 2023.

"The net effect of cartons per hectare multiplied by the price potential: 2018 was a very high yield per hectare, but the price wasn't very good, so farm gate income was R82,000 [4,128 euros] per hectare. In 2020 yield was low, but prices were phenomenal, and the farm gate income jumped to R173,000 [8,709 euros] per hectare. This was followed by two very weak years in a row, during which farm gate income fell to R82,000 per hectare in 2021 and R62,000 [3,120 euros] per hectare in 2022, a point at which it is almost not profitable to farm citrus."

A rising tide lifts all boats, Winter remarks. "We know what the most profitable farms are doing to get to that point, and we know what is done on the farms with the lowest competitiveness. Over the past five years, costs climbed to around R90,000 [4,530 euros] per hectare. When we see the packout is low, the first thing we will investigate is: how much was spent on chemicals? If we see the yield potential is low, we look at how much was spent on fertilizer. If that is on par, we move on to water availability, and irrigation."

This season demonstrates what happens when not enough rain falls in January and February, he says, and consequently fruit are very small.

Saving costs: don't touch the fertilisers



"What we are observing when looking at tree health and in our packhouse analyses and at the macadamia nut handlers is that as producers' profitability have become marginal or even negative, they started cutting back on the amount of fertilizer they were putting down," says Winter (*right*), and on the surface it seems a rational decision: fertilizer costs have gone through the roof, especially during 2022.

Odendaal remarks: "We're seeing that the large jump in fertilizer costs didn't fully realise as anticipated because farmers cut back on the amounts they put down."

However, the Source BI team has picked up a clear correlation between this reduction in fertilizer use plus crop protection and fruit quality, both on avocados and macadamias.

The industry is now asking itself whether this was the right thing to do in a cost-cutting environment, and Source BI certainly doesn't think so. "We've studied the farms with the lowest breakeven points," Winter says, "and we've identified that these are usually your producers with the highest yield because it brings down the effective cost per unit produced. You can't touch your fertilizer programme: it's the engine room that generates your income."

Time and again, he says, they observe that the 'cheapest' farmers are those with the highest tonnages. "And what's interesting," Odendaal adds, "is that when you look at their costs per hectare they're towards the more expensive side. They're spending a lot of money, but they spend it effectively, and their effective breakeven point is low."

Odendaal points out that packing costs are another a line item getting out of hand, increasing by 13% YOY from 2019 to 2023. "To pack 1 500 cartons per hectare is

almost R85,000 per hectare – almost the same as the production cost per hectare!"

Producers who can't keep a lid on packing costs, he remarks, have a very high breakeven point.

Labour costs increase every year in line with the minimum wage, while transport across hundreds of kilometres is another ballooning line item.



Medium-term expectation of fuel cost drop

"It's frightening to see how the electricity problems have presented in the data but despite the tariff hikes, it's not evident in the electricity cost per hectare, which has actually risen fairly gradually. But the moment you look at fuel costs you see an exponential growth as generators need to run to ensure constant electricity supply," says Winter. Producers are investing more in solar energy, creating an expectation that fuel costs will come down in the medium term.

However, the challenge is energy battery storage for night use – the most expensive part of energy independence. (Benchmarking figures exclude the cost of interest on these capital outlays, as well as depreciation and other overheads.)

"The independence and integrity of Source BI data means that it makes a powerful foundation for other applications as well, such as unique agricultural insurance products like Patula BI, of which we're is a co-founder. These products

are able to cover multiple climatic perils through more tailored Insurance cover, not just the historical "hail and windstorm" cover."

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