

Agriculture challenges in South Africa: We need a different lens

By [Christian Giesel](#)

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It is no secret that ours is a country that encompasses the full development spectrum: from some of the most sophisticated financial systems in the world to traditional bartering practices in deep rural areas; from consumers that only buy food that is certified organic, to households that can barely afford the basics.



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The same spectrum applies to the full agriculture value chain and has to be the backdrop to any discussion on challenges and their solutions. This means that global challenges play out differently here and that our responses to them must be locally informed. It also means that while the spectrum adds complexity, it offers a diversity of responses.

That said, here is my take on three challenges local growers are grappling with.

Climate change, soil erosion and biodiversity loss

South African farmers have long been stewards of the land, but we have to change our ways if we want to keep on producing, especially at the levels that a growing global population requires.

Soil health is a major part of the answer to how we deal with climate change, soil erosion and biodiversity loss. You can only play the hand you have been dealt, and in South Africa that hand is soils with a very low organic content. Soils in the high-yield-potential Wesselsbron area in the Free State, for example, have an organic content of less than 0.5%. Compared to the 4% to 6% organic content found in Illinois in the USA, we practically farm in a desert! This means that American farming practices cannot automatically be duplicated here.

Our response has to focus on conservation tillage practices. Living plant material year-round adds organic content to soil, and prevents erosion caused by wind and/or flooding – the kind of extreme weather that occurs with increasing regularity.

Conservation tillage raises some producers' hackles, given that crop debris, weeds and even certain rotational crops provide a habitat for insects and fungal diseases. Likewise, however, they also shelter beneficial organisms.

The answer to this conundrum lies in an integrated approach that includes chemical crop protection and strategic cultivation. The days of ploughing for the sake of ploughing are gone. We simply cannot afford to lose organic matter in the form of CO₂ just because tradition tells us when to do what. Cultivation has to be done purposefully and mindfully.

Technology versus employment

Farming is a numbers game where economies of scale make all the difference. In the developed world, that leads us straight to technology and automation. In South Africa, it is less straightforward due to our labour realities and the social responsibility all employers have to keep people employed.

This does not mean, however, that we should shun technology. Quite the opposite: we should use technology to deploy our labour force as effectively and productively as possible. Automation might not be appropriate in all circumstances, but the precision that technology enables must be pursued to minimise input losses and environmental impact.

A tool like Cropwise Operations, for example, illustrates this principle. Cropwise Operations is a digital platform that offers a comprehensive management system for crop monitoring, planning and record keeping. Using the Internet of Things (IoT), it integrates with sensors in farming equipment and weather stations to take the drudgery out of precision farming. As a result, growers are enabled to reduce inputs, including fertiliser, pesticides, diesel and water for irrigation, while getting the most out of every application.

The same applies to using drones for scouting and gathering information. The focus of using technology is therefore different, but its value remains undisputed. I think such an approach goes a long way to mitigate the tension between technology and employment.

Evolving consumer preferences and expectations

Consumers in the developed world are indeed demanding sustainably sourced food, which is putting pressure on producers both in terms of cultivation practices and the inputs, pesticides specifically, they are allowed to use. But it is also true that first-world consumers are not the only consumers out there. Millions of people in our own country and worldwide are struggling to just not go to bed hungry. This does not mean that they can be treated as a dumping ground for inferior and even dangerous food; it means that we are not all competing for the same market and that growers can and should tailor their practices to the market they wish to serve.

Requirements to export to the US and the EU specifically are in some instances unreasonable and unnecessary and add tremendously to the cost of production. Choosing to serve a different market – with equal quality but fewer hoops to jump through – can have a material impact on a farm's profitability.

A growing preference for locally sourced food, also opens up opportunities for growers and could prove a way to mitigate

long-distance transport costs and the appalling state of rural roads.

A more nuanced approach to responding to consumers' needs and preferences can furthermore help growers to better deal with global economic shifts. Diversifying crops, exploring niche markets and building strong networks are all ways to improve the resilience of individual growers and the local industry.

Despite its challenges, agriculture remains a uniquely satisfying path. More than a career choice, it is a commitment to the future of humanity and the planet. Thanks to technology, farming is no longer an existence of isolation, but it remains an existence that keeps us connected to the very essence of life. Looking at the industry's challenges through a slightly different lens brings all of its opportunities into focus.

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