

Using tech and innovation to ignite widespread agricultural transformation

The South African agricultural sector is defined by untapped potential.

The vast landscapes, the fertile soil and the remarkable weather systems are opportunities for growth and economic transformation. However, there remain issues around limited productivity, lack of investment and poorly maintained infrastructure, alongside legacy challenges with regard to supply chains and access to supplies and services.

To overcome these in sustainable and transformative ways, there has to be a consistent investment into innovations and collaborations that can help the sector reshape these challenges and redefine the future.



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According to the United Nations (UN), the continent is still finding its feet after the Covid-19 pandemic and both lives and livelihoods remain at risk.

The UN has put several initiatives in place designed to help the transformation of agriculture across Africa but underscores the value of investing in solutions that embed sustainability into the very fabric of the sector. This view is echoed by a recent analysis undertaken by Brookings that highlighted how Fourth Industrial Revolution technologies can address the productivity issues inhibiting transformation in the sector.

Shaping the narrative

However, the research equally underscores the importance of going beyond technology. True transformation is more than investment into digital – it's about shaping the digital narrative to ensure that digital actually delivers.

"It's critical that the adoption of technology and innovation is aligned with realistic objectives and implementations," says John Hudson, Nedbank's national head of agriculture.

"This means ensuring that it helps farmers to become more sustainable, profitable, productive, efficient and resilient. These are key performance metrics against which every innovation should be measured. Does this technology truly make it easier to manage my supply chain? Does this investment really make my farm more sustainable and resilient to shocks? Technology must answer these questions at every point in the process so that it doesn't run the risk of simply being technology for the sake of it."

Leveraging technology

The South African agriculture narrative is complex. There are no easy solutions. There is no plug-and-play platform that will step up and change the issues around the crumbling infrastructure, unreliable power provision or poor market performance. However, there are tools that can and will change how the sector manages its access to markets, how it engages with customers, how it gains access to private investment, and how it embeds resilience into every aspect of the business.

An example of this is how technology has been leveraged to address the water problem.

With South Africa considered a semi-arid country with low rainfall, a reliable source of water is invaluable for the agricultural sector. This has seen the development of intelligent water management solutions that are capable of managing plant hydration and resources.

Some of the most notable solutions in this space include Nosetsa, a solution that helps farmers develop more sustainable irrigation; smart water management tools that use the Internet of Things and sensors to manage water consumption and distribution; and artificial intelligence systems that can automate, analyse and interrogate water usage.



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This innovation is echoed in start-ups and solutions that are currently transforming the South African agricultural sector. Organisations like Aerobotics, a smart analytics company; Khula! - a software and mobile marketplace; Biotikum, a producer of microbial additives; and Ooka, a small-farmer marketplace, are invigorating agriculture in the country. This is supported by public sector institutions such as the Technology Innovation Agency that are funding innovation within the sector and driving the development of solutions that directly address local challenges.

"The sector now needs to build on transformation and technology to become more resilient and robust," says Hudson. "Companies need to leverage the right technology to solve their unique and specific problems. If the challenge is infrastructure, the focus must be on technologies that ease the hiccups in supply, power and transport. If the challenge is water, the focus must be on technologies that have proven value in refining water usage and costs. Fit the technology to the problem rather than throw technology at the problem."

Investment in strategic agricultural priorities and smart value-based initiatives will support the development of an environment that is empowering, enabling and resilient. Using technologies that are proven to de-risk, serve farmers, and directly address unique local challenges. Agriculture can redefine the future.

"The modernisation of agricultural infrastructure has the potential to fundamentally change the South African dialogue," concludes Hudson. "It can put Africa firmly on the global stage, cementing its potential as the breadbasket of the world. It can turn complexity into opportunity and give farmers the chance to build businesses that directly benefit communities and the economy."

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