



Is load-shedding accelerating the adoption of sustainable agriculture?

The worsening energy crisis is having a devastating effect on South African agribusinesses. The record 5 761 GWh of load-shedding in 2022 – more than double the figure for 2021 – severely disrupted agriculture and agro-processing operations to the point that the sector reportedly lost R23 billion due to crop failure and a decrease in productivity last year.

The impact of load-shedding on the agricultural sector is all-encompassing: from irrigation and alarm systems to keep livestock contained, to cold storage facilities at farms and ports and the operation of railway lines. Field crops, fruits and vegetables rely heavily on irrigation, and these crops combined mean that 33% of South Africa's total farming income is directly dependent on irrigation. The livestock sector, which accounts for 43% of gross farming income, requires continuous power for water supply, climate control, and processing.

John Hudson, Head of Agriculture at Nedbank, says that cold-chain management, in particular, is severely impacted by rolling blackouts. 'Certain produce and vaccines require uninterrupted cold storage across the transport process. This is also critical for products that are exported to markets such as the European Union, which imposes ever-increasing requirements for temperature and timeframes to ensure safe consumption. At the same time, farmers and agribusinesses are becoming increasingly pressured by export markets and consumers to reduce carbon emissions and offer low-carbon agricultural products.'

Besides the operational impact, rising costs are impacting heavily on the sector. According to the Bureau for Food and Agricultural Policy (BFAP), apart from the electricity industry itself, agriculture has one of the highest uses of electricity to value added in the South African economy, alongside food retail, restaurants, and water. And with electricity prices escalating higher than inflation – increasing at 13,6% per annum since 2008 – the cost of electricity is eating into the sector's already low margins. In addition, investing in diesel generators and the diesel to run them incurs further additional costs, and farmers are also losing out on the lower, off-peak electricity tariffs offered by Eskom's Ruraflex system. This system usually affords farmers a cheaper timeframe for irrigation, but load-shedding has forced farmers to operate outside these timeframes at higher tariffs.

Many agribusinesses are operating at a loss as a result. Poultry producer Astral Foods, for example, has disclosed that it is currently producing poultry products at a loss of R2/kg because of rolling blackouts. Unfortunately, as rising costs to produce food are felt from farm to market, price adjustments will ultimately be passed on to the consumer – negatively affecting both affordability and food security.

Is there (solar-powered) light at the end of the tunnel?

Since the severity of power outages has increased, the demand for solar installations is unprecedented. Hohm Energy, which partners with Nedbank to finance and install solar energy solutions to the agriculture sector, has reported a substantial increase in solar interest – up by 500%

over the past six months and by 1 000% compared with a year ago – while the South African Photovoltaic Industry (Sapvia) says that solar PV providers have been receiving up to 1 700 applications from households per day. According to GreenAgri, 10% of all installed PV systems in South Africa were in the agriculture sector in 2020 – a figure that has been expected to grow at 10% per annum but has probably ballooned since higher stage load-shedding has kicked in last year and the capital allowance for accelerated depreciation has been increased to 125% of the initial costs in the year that the business starts using the solar system.

Interestingly, BFAP research found that the number of farms serviced by Eskom increased between 2000 and 2015. Since then, particularly after 2020, the number has declined for various reasons, including the move to renewables due to load-shedding, escalation of prices, and weak service delivery. This decline coincides with an increase in intensity of electricity use at farm level due to the growth in irrigation and technology use, which suggests that farmers are using more electricity but relying less on the grid.

Mitigating energy insecurity also creates a climate-resilient future

Hudson says that, in addition to encouraging the move to alternative energy sources, South Africa's unstable power supply is encouraging farmers to consider ways to reduce their reliance on irrigation. 'At Nedbank, we've long advocated for regenerative agriculture – a practice that involves building soil health and using practices that reduce irrigation demands. By simply restoring the health of soil through regenerative agriculture, its water retention properties increase considerably – so much so that the US National Resource Defence Council estimates that a 1% increase in soil organic matter (an indicator of soil health) increases water storage potential by more than 187 000 litres per hectare.'

Another way to reduce irrigation needs is to use technological innovations to closely monitor and respond to specific water needs. A host of tech exists for this, including the water optimisation tools offered by precision agriculture company, Aerobotics. Soon it will be possible to wirelessly integrate sensors into irrigation systems to provide real-time observation of soil moisture levels and responses. Studies suggest that this strategy can reduce irrigation demand by up to 70%.

'In addition to mitigating against South Africa's ongoing energy crisis and sharply rising costs, shifting to more sustainable farming is essential for creating a more secure and climate-resilient future at farm and sector level,' says Hudson.

This topical issue and more will be debated at the **Nedbank stand at Grain SA's Nampo Harvest Day in Bothaville from 16 to 19 May 2023**. Discussions will centre around key issues in the sector, including sustainability, load-shedding and renewable energy, the value and importance of partnerships, as well as transformation.

To speak to the Nedbank Agricultural team at Nampo 2023, please visit our stand. Members of the media can contact agriculture communications specialist, Gillian Gernetzky, on 082 892 8378 or at gillian@percheron.co.za.