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Cotton balers usher in a new technological era for small-scale cotton farmers

Small-scale and emerging cotton farmers in Matlerekeng, Limpopo, and Nkomazi, Mpumalanga, are embracing technology after receiving two cotton baler machines, signaling the end of manual cotton baling.

In the past, the farmers used bags and their feet to bale the cotton. But with the intervention of the Department of Science and Innovation (DSI), and its entity, the Technology Innovation Agency (TIA), the farmers received two balers last week.

They will receive training in how to operate and maintain the machines.

An excited beneficiary and farmer, Billy Diale of the Peo-Entle Co-operative, is looking forward to receiving training to use the machine, as it will make his work much easier and cheaper.

"The baling process we are using is lengthy and expensive," he said. "We are now looking forward to reduced costs and a simplified process."

Another farmer, Maria Swele, who has been farming cotton for 18 years under the Swara o Tiise Molemi Agricultural Co-operative, is relieved that manual baling is going to be a thing of the past. She believes that the co-operative will be able to do much more with the help of the technology.

The Minister of Higher Education, Science and Innovation, Dr Blade Nzimande, said last week that the machines would not only lower the small-scale farmers' input costs by 8-12%, but also increase their contribution to the national crop.

"The machines will enable farmers to conduct primary agroprocessing using a hub-and-spokes model, so that they can leverage economies of scale to aggregate their produce into bales, which the gins can accept without additional costs for the small-scale farmers," said the Minister.

Without the baler machines, cotton harvested by smallholder farmers is delivered to the ginneries in woolpacks and most of the ginneries have modernised their gins to process round bales aligned to the mechanisation that commercial farmers are using. This means that the cotton ginneries incur additional costs to build special modules for cotton delivered in different forms so that they can process it.

Preliminary investigations indicate that if small-scale farmers could deliver their cotton in round bales, this would result in a saving of 11,1% per kg of seed cotton, which could lead to an additional income of about R1 500 per farmer per 2,5 hectares. This is a saving that could have a multiplier effect in terms of socio-economic benefits in their area.

The procurement of the machines was facilitated by Cotton SA with funding from the Department of Science and Innovation (DSI) and its entity the Technology Innovation Agency (TIA) through the DSI's funding instrument, the Agriculture Bioeconomy Innovation Partnership Programme.

Cotton is considered one of the best crops for poverty alleviation. One hundred per cent of the plant can be used in various industrial applications. Cottonseed is crushed to separate it into three products, cottonseed oil, which is used in the food and cosmetics industries, cottonseed meal, which is used in livestock feed, and hulls, which are used in fertilizer, fuel and packaging. The rest of the plant – stalks and leaves – is used for pressed paper and cardboard or ploughed back into the soil to enrich it.

The Head of Agriculture at TIA, Sibusiso Manana, says that provision of the balers is aligned with TIA's developmental mandate of supporting the diffusion of technologies to emerging and smallholder farmers for increased participation, productivity and profitability. Particular targets for TIA's support are women in rural areas, the youth and people living with disabilities.

"This kind of partnership is part of the role played by TIA as an industry builder, engaging in value chain interventions that are economically inclusive in their setup," he explains.

Tertius Schoeman, Manager for Transformation and Development at Cotton SA, says that their strategic plan is to increase smallholder black farmers' participation to 20% of the national crop in South Africa by 2026. He expects that the Nkomazi machine will benefit over 70 farmers.

"The Matlerekeng baler machine will benefit farmers from Matlerekeng, Dichoeung, Nokaneng and Rust de Winter," says Schoeman.

Deputy Director for Biotechnology at the DSI, Dr Thabang Bambo, said that the funding of the machines was aligned with the 2019 White Paper on Science, Technology and Innovation, which identifies the importance of access to technologies, as well as enhanced services and processes that support inclusivity and commercialisation.

"To implement the White Paper, the DSI has developed a decadal plan, which provides a strong theory of change for innovation in driving the revitalisation of agriculture. We must take advantage of this recognition to build the agriculture sector," said Dr Bambo.

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