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Building climate resilience important for agriculture, forestry and land use sustainability

18TH NOVEMBER 2021 BY: SCHALK BURGER - CREAMER MEDIA SENIOR CONTRIBUTING EDITOR

Agriculture, forestry and other land use (Afolu) in South Africa is significantly threatened, with export earnings, farm and plantation workers' livelihoods and food availability at risk.

This is particularly the case in the Western and Northern Cape, which are expected to face the worst water stress, and account for about 95% of South Africa's deciduous fruit exports, about 25% of national agricultural earnings and about 35% of national agricultural employment.

The research was conducted by the National Business Initiative (NBI), Business Unity South Africa (Busa) and the Boston Consulting Group (BCG) as part of a comprehensive and consultative process to show that it is possible to decarbonise key sectors of the South African economy.

"The whole of South Africa will be impacted by the negative effects of climate change; however, the South African Afolu sector is at significant climate risk. Ensuring food security and sustainable and healthy diets for all South Africans

and maintaining the sector's socioeconomic contribution requires the development of a climate-resilient Afolu sector."

A just transition for the Afolu sector, among other requirements, is one that unlocks sustainable, healthy diets for all South Africans and ensures that small-scale producers are supported to increase productivity and gain agricultural and business skills, the organisations say.

"On a farm and plantation level, adaptation measures, such as climate-breed matching, and fire and pest prevention systems can build resilience and production efficiency, and reduce emissions per unit produced.

"On a system level, improved water-use monitoring and transmission infrastructure, data-backed agricultural and forestry water allocation, and accessible climate event monitoring will be critical to ensure climate resilience," the report authors note.

The Afolu sector accounts for about 10% of national greenhouse-gas emissions, driven by livestock at 75%, fertiliser use at 18% and fuel combustion at 7%, and adaptation measures taken in the sector could drive some emission reduction.

However, significant emissions remain and, to fully decarbonise the sector, dedicated mitigation levers need to be deployed, the NBI said.

The report outlines some of the complexities of a just transition in South Africa's Afolu sector, and also provides a comprehensive list of no-regret or low-risk actions that can be taken in the short- to long-term to facilitate and drive adaptation and mitigation in the Afolu sector while ensuring food security, environmental-resilience, and socio-economic development.

"To enable effective adaptation, it will be critical to build more capacity among farmers and growers and to improve and expand agricultural and forestry

extension services, which would require a doubling of Afolu-related research and development spending in line with the National Development Plan targets, roll-out of demand-side incentives, such as market access in exchange for resilient practices and deployment of blended finance mechanisms," the report highlighted.

Global climate change could impact South Africa significantly, as, in low and moderate mitigation scenarios, South Africa's average inland temperature could rise 2 °C to 4 °C by 2050, about twice the average global temperature increase, and average rainfall could decrease by about 60 mm a year in most western and northern regions of the country.

Meeting a sustainable, healthy diet for all South Africans could require >170% increases in soybean and vegetable production, and ~20% increase in deciduous fruit production by 2050, even if production for export and livestock is diverted to local food demand. This would require land-use prioritisation for hardier, nutritionally-dense foods and import strategies for starchy staple commodities that are expected to be in shrinking demand.

"A just transition needs to unlock sustainable and healthy diets for all South Africans. However, sustainable, nutritional diets currently cost about four times more than the average, nutritionally-inadequate, local diet, and about 1.5 times more than the cheapest nutritional, carbon-intense diet in South Africa."

In light of a growing population, food demand will grow by about 50% by 2050, causing the Afolu emissions baseline to grow by about 40%, if current, nutritionally inadequate diets are maintained, or shrink by about 37% if sustainable, low red meat, diverse and nutritionally-balanced diets are adopted.

"Regardless of diet progression, ensuring farming and forestry best-practice reduces emissions and builds resilience. Best-practice livestock health, feed,

manure and breeding management can eliminate about 19% of yearly emissions, while sustainable land and fertiliser management, and integration of renewable energy to meet energy demand eliminate 17% and 19% of annual emissions, respectively.

However, with farming and forestry best practices implemented, by 2050, emissions can only be reduced by about 40% versus the 2017 baseline, with current diets, and by about 70% with sustainable, healthy diets, leaving 16-million tons to 39-million tons of carbon dioxide-equivalent in residual emissions that must be addressed using more disruptive levers, such as hydroponics and, in the more distant future, laboratory-grown meat.

"Measures to build a climate-resilient food supply could further increase production cost. Therefore, it will be critical to ensure affordability of future food supply," the report authors said.

To ensure a just transition, small-scale producers must be supported to increase productivity and gain both agricultural and business skills. This requires improved extension services and climate monitoring, access to finance and offtake incentives for sustainable practices.

It may also require tenure reform, as farm workers require new work opportunities and agri-dependent communities need to be identified and plans made to diversify economic opportunities. 🇷🇷

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