What SA needs to achieve a carbon neutral food supply chain

South Africa has a carbon-intensive economy, mainly due to its current reliance on coal for power generation. With this, there are many other greenhouse gas (GHG) contributors that make South Africa the world's 12 biggest emitter of GHG's, including the food supply chain. If we want to achieve our carbon reduction targets, says Julien Rambert, director of BiobiN South Africa, business as usual will not cut it.

Source: Adrian Infernus via Unsplash

"With an ambitious carbon reduction plan of cutting emissions by 28% by 2030, South Africa will need urgent and clear decarbonising plans for each sector. A carbon reduction plan for our food production sector needs to look at implementing sustainable agricultural practices and reducing the amount of food waste going to landfill," says Rambert.

Regenerative agriculture

South Africa's agricultural sector is set to become an even bigger contributor to GHG emissions as the sector will have to double its production by 2050 to meet our food demand. With this, more fertile land will be worked, more will be transported, and more food waste will be produced. As South Africa's population demands a greater food production, a carbon reduction plan will need to consider longer-term sustainable agricultural practices.

"Our food systems, from growing to disposing, account for up to a third of GHG emissions," says Rambert. "With land-use change, biomass burning and through the use of synthetic fertiliser, large amounts of stored carbon is displaced while other emissions such as nitrous oxide is released."

"With our carbon reduction targets and a predicted increase in food demand, we need to look at more sustainable agricultural practices, specifically regenerative agriculture."

Regenerative agriculture looks at principles and practices of farming that will focus on rehabilitating the ecological integrity of the land while keeping carbon stored in soil and plants. There are several different regenerative agricultural practices, such as controlled grazing and minimizing the physical disturbance of soil (conservation tillage), that will prevent the release of carbon emissions.

While regenerative agriculture will prevent carbon, organic compost will put carbon back into the soil. Retaining a landscapes natural vegetation will also remove more carbon out of the atmosphere.

"Thinking about the future of our food systems, we need to account for the carbon cycle. Through regenerative agricultural practices and composting we can manage the agricultural sectors contributions towards carbon emissions and climate change," says Rambert.

Landfil food waste

Considering the full food supply chain, it is important to look at the disposal stage. Disposal of food waste in landfill is a massive contributor towards GHG emissions. When food waste degrades it produces carbon dioxide and methane, two of the biggest contributors towards global warming. For South Africa to decarbonize the food supply chain, emphasis needs to be placed on disposal to landfill.

"Diverting waste from landfill, especially organic waste, means that we have a carbon and methane reduction opportunity. It is also an opportunity for businesses to be carbon conscious by composting organic waste," says Rambert.

Carbon policy instruments

From a regulatory perspective, different policies and tools have been tested and measured in South Africa as our own commitment to the Paris Agreement. South Africa’s recently introduced carbon tax is an example of this.

The carbon tax came into effect in 2019, requiring companies that emit a high level of carbon, to pay tax. This is an extension of the ‘polluter pays’ principle. While the carbon tax regulations have been felt by heavy emitting sectors, it will apply to the food production and waste management sectors in the foreseeable future.

The question is, how can the food production and waste management sectors offset their carbon emissions to reduce their carbon tax liabilities?

According to carbon tax regulations, organic waste management technology is eligible to register as a carbon credit project, which presents a strong business case to operate an organic waste management business, like commercial composting projects.

"Considering the nature and impacts of food waste, stakeholders within the food supply chain should be considering composting projects as a means to offset their carbon footprint," says Rambert.