of Pretoria, assessed the potential impact of the carbon tax on the country’s agriculture and food sector’s emissions as well as economic performance using a single country dynamic computable general equilibrium (CGE) model. This research was funded by the National Research Foundation.

What is carbon tax?
The primary objective of the carbon tax is to reduce GHG emissions in a sustainable, cost effective and affordable manner. The Carbon Tax Act gives effect to the “polluter pays” principle for large emitters and helps to ensure that companies and consumers take the negative adverse costs into account in their future production, consumption and investment decisions. In addition, companies are incentivised to adopt cleaner technologies.

Implications of the tax on sectors
The research found that at a macro level, carbon tax is an effective tool to reduce GHG emissions as it will lead to large emission reductions in the country. However its implementation has divergent implications for sectors in the economy.

As one of the key exporters in South Africa, accounting for nearly 10% of total exports, the agriculture and food sector, which accounts for 7% of the country’s emissions, will realise positive benefits from the implementation of the carbon tax as output, employment and exports will improve. This is as a result of allowing for the trade exposure allowance in the policy which will help the sector to maintain their competitiveness in the international markets.

On the other hand, heavy GHG emitters such as the coal-generated electricity, steel, metal, and petroleum sectors, will be severely affected with output declining by an average of 34% over the next 25 years relative to the baseline. The energy sector currently accounts for 84% of the country’s emissions.

This research provides empirical evidence that efforts to green the economy will have a positive benefit for the agriculture and food industry.

Way forward
The researchers argue for the agriculture sector to realise the potential benefits, policymakers will have to maintain full tax exemptions in agriculture and reinvest the revenue from the collection of carbon tax back into the economy.

All tax exemptions must also be extended to the food sector given its importance in ensuring food security in the country. In addition, policymakers must develop other approaches to reduce food waste as it counts as one of the primary sources of emissions from the food sector.