

Cutting-Edge Soil Carbon Monitoring for a Climate-Resilient Agricultural Future

Delivering affordable, scalable tools to support landholders in sustainable farm management and carbon market participation

QUT researchers have developed Agrimix Flux - Australia's first commercial soil carbon measurement platform delivering daily, property-specific data on carbon sequestration and ecosystem health.

This real-time, scalable alternative to traditional soil sampling tackles a major barrier in Australian agriculture—the high cost and complexity of measuring soil carbon at scale. By providing accurate, timely data, it enables farmers to track carbon drawdown, participate in carbon markets, and could reduce measurement costs by up to 90%.

Led by Professors Peter Grace and David Rowlings from QUT's Centre for Agriculture and the Bioeconomy, the research team collaborated with Agrimix, Meat & Livestock Australia (MLA), and the National Soil Carbon Innovation Challenge (Australian Government) to overcome these barriers.

The system integrates eddy covariance flux tower technology, remote sensing, and advanced environmental modelling, and has been validated on grazing sites across Queensland and New South Wales.

Agrimix Flux is designed to support producers, carbon project developers, and policymakers with cost-effective, evidence-based insights into land condition and carbon outcomes. As it moves toward commercial release in 2025, it is already improving decision-making, building confidence in soil carbon reporting, and expanding access to carbon markets—helping lay the foundation for more climate-resilient and economically sustainable agriculture across Australia.



Impact highlights

- Integrated flux tower, remote sensing, and modelling to create a cost-effective, scalable alternative to traditional soil sampling.
- Validated on multiple trial sites in Queensland and New South Wales, with demonstrated potential to reduce measurement costs by up to 90%.
- Research team led by Professors David Rowlings and Peter Grace, with key contributions from Dr Christian Brunk, Dr David Tucker, Dr Fabio Manca, Dr Johannes Friedl, Mr Liam Grace, and Ms Annabelle Ramsay.

