

Enhancing productivity and sustainability through innovative irrigation management.

Fourth-generation Marian sugarcane grower Peter Doyle is confident that improved irrigation management supported by automation, decision support software and upgrades to infrastructure are contributing to increases in productivity and profitability, while mitigating nutrient and chemical losses.

Due to a challenging farm layout, Peter's historical irrigation systems were unable to supply enough water to meet crop demand while being labor and energy intensive. He set out on a ten-year journey towards improving irrigation infrastructure, initially installing additional underground pipes to improve operational efficiency.

"The problem was I could not get enough water on quickly enough and it was labor intensive impacting my other farm management task" said Peter.

Seeing the added benefits of real time data from moisture and soil probes and crop growth modelling to help with improve irrigation decision making, Peter joined the Mackay Whitsunday Water Quality Program. Since 2021 and in partnership with CANEGROWERS Mackay, Peter has been working toward optimising energy consumption and water use efficiency of his irrigation systems.



Marian Canegrower Peter Doyle

"I was already on the path of improving irrigation infrastructure when I saw this project was aimed at doing just that, so I wanted to work with CANEGROWERS and determine my best return on investment," said Peter.

Under the Mackay Irrigation Project, Peter is now able to use his mobile phone to start and stop pumps, saving valuable time which would have been spent traveling long distances back and forth between farm and pump. The addition of moisture and soil probes has given Peter the ability to collect data on the plant's available water down the soil profile, and decision support tools help to interpret data which Peter then incorporated with his own on farm experience, overtime learning and improving productivity.

This investment in irrigation has resulted in an increase in the yield of sugar per hectare while also improving incorporation of inputs, contributing to important improvements in water quality flowing through to the local creeks and waterways.

"It's not just about growing extra cane, irrigation also gives you a somewhat guaranteed income. If you don't have off farm income and rely on cane for your income, having that guarantee is a big plus. It also helps us in terms of chemical run off and fertiliser uptake because the more we can irrigate before we get the big rain science shows us, we are less likely to lose that chemical and keep it on farm," said Peter.

The Mackay-Whitsunday Water Quality Program is funded by the partnership between the Australian Government's Reef Trust and the Great Barrier Reef Foundation.



Reef Catchments Project Officer Todd McNeill with Peter Doyle.