REEF CATCHMENTS
MACKAY . WHITSUNDAY . ISAAC

Unlocking Circular Value

IN THE MACKAY WHITSUNDAY ISAAC REGION

The Greater Whitsunday region already has the resources and industry activity needed to support circular opportunities. The challenge is connecting those resources, industries, markets and infrastructure so more value can be retained within the region.

By working together and finding smarter ways to use existing resources, the region can create economic value while reducing resource losses and improving environmental outcomes.

What is a circular economy?

A circular economy keeps resources in use for as long as possible. Instead of taking, making and throwing away, it looks for ways to reuse, recover and repurpose what's already in the system — turning waste and by-products back into value, rather than losing them.

Focus

Reef Catchments' Circular Economy Initiative, delivered in partnership with Bivio Consulting, explored how the Greater Whitsunday region can generate more value from resources that are currently lost or treated as waste.

The study focused on the region's sugarcane and aquaculture industries and examined how nutrients, organic materials and industry by-products move through the local economy. It also explored opportunities to recover, reused and transform these resources to support industry, improve resource efficiency and contribute to better water quality outcomes.

Findings

The region has valuable resources, existing industry capability and opportunities to create greater value from materials that are currently lost from the local economy.

The challenge is creating the right conditions for those opportunities to become commercially viable and operate at the scale needed.

The study found large amounts of nutrients entering the system through fertiliser and aquafeed are lost through runoff, wastewater, discharge streams and other waste pathways. These losses represent both an environmental challenge and an opportunity to retain more value within the region.

$4.4b
annual contribution of the sugar industry

$1b+
investment potential at the emerging Mackay BioHub

~3m
tonnes/year of biomass feedstock available

~1m
tonnes spare capacity at sugar mills

20,000+
Jobs Supported

Opportunities

The research identified several areas where value could be captured and retained within the region, including:

- recovering nutrients and turning them into fertiliser products
- reusing organic materials and industry by-products
- producing bioenergy and other renewable products
- improving water reuse and resource efficiency
- creating higher-value products from agricultural and aquaculture resources

Importantly, many of these resources are already available in the region. The opportunity is to develop the connections, markets, infrastructure and partnerships needed to make better use of them.

Barriers

1. Uncertain markets

Many emerging products don't yet have established customers or reliable markets or clear pathways to commercial scale.

2. Investment challenges

Projects often need significant upfront investment before their commercial value and long-term viability can be demonstrated.

3. Lack of shared infrastructure

Many opportunities rely on shared processing, storage, transport and other infrastructure that does not currently exist at the scale or location required.

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Benefits

A stronger circular economy could help the Greater Whitsunday region:

- create new jobs and industries
- keep more value in the local economy
- reduce dependence on imported inputs
- improve resource efficiency and reuse
- strengthen regional resilience
- reduce nutrient losses
- support better water quality outcomes for the Great Barrier Reef

Future

The study recommends a more coordinated regional approach.

Rather than individual projects working in isolation, the report encourages greater collaboration between industry, government, researchers and community organisations to develop shared solutions, infrastructure and markets.

Key priorities to attract next stage project funding to resource the coordination of:

1. key stakeholders around shared project priorities
2. support industry-led innovation and viable solutions
3. attracting investment into shared infrastructure and emerging circular industries.

The Proserpine Integrated Project delivered by Reef Catchments is part of the $5.5 million Reef Place-Based Integrated Projects initiative funded through the Queensland Government's Queensland Reef Water Quality Program.

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