

TE HONONGA HAPORI HARAKEKE | THE HARAKEKE COMMUNITY ALLIANCE [HHH]

Ngāti Ruapani ki Uta ki Tai Co-operative Society Ltd & Biotenax Ltd

[FINAL REPORT SUMMARY]**Research Aim - Phase I: FEASIBILITY ANALYSIS & BUSINESS CASE [FABC]****MPI Project Number: 2024MABX044****HHH FABC Synthesised summary_MS4 Phase I research.**

This report makes the case that **re-establishing a modern Harakeke industry in Aotearoa New Zealand is feasible**, provided development is coordinated across land use, processing, markets, research, and investment. It is not framed simply as reviving an old fibre industry, but as creating a **new regenerative, Māori-grounded natural fibre and bio-products industry** that combines commercial returns with environmental restoration, cultural protection, and community resilience.

1. The core proposition: Harakeke as a regenerative industry platform

The report argues that Harakeke is uniquely positioned to support a **multi-outcome industry** rather than a single commodity crop. The key proposition is that Harakeke can deliver:

- Commercial outputs through long-staple fibre, scutched fibre, by-products, and higher-value downstream products
- Environmental outcomes through riparian planting, erosion control, flood resilience, biodiversity enhancement, and improved water quality
- Climate-aligned land use for marginal, flood-prone, under-utilised, and non-food-producing land
- Social and cultural outcomes through Māori land development, intergenerational knowledge transfer, rangatahi pathways, and protection of taonga species and mātauranga

A major theme is that Harakeke should be understood as a **regenerative land-use platform**, not just a fibre crop. That shift in framing underpins the whole business case.

2. Why the opportunity exists now

The report says current conditions are more favourable than at any time in recent decades. It highlights a convergence of:

- growing global demand for low-carbon natural fibres
- pressure for traceable, ethical, and regenerative supply chains
- increasing need to transition climate-affected and low-performing farmland
- stronger interest in environmental restoration and biodiversity-linked land use
- renewed domestic knowledge and capability in Harakeke research, planning, and early-stage processing

The report's central strategic conclusion is that **HHH is well placed to act now**, especially because key barriers that previously stalled the sector—loss of harvestable resource, loss of processing capability, and lack of coordinated investment appetite—have begun to be addressed.

3. The development model: coordinated, collaborative, and phased

A recurring message throughout the report is that the industry will only succeed through **collective action**. The document explicitly notes that across Q1 and Q2 conferences, including the **first three-day HHH symposium in Auckland in March 2026**, the strongest consensus was that the industry should avoid duplicated R&D and instead pursue **shared resources, pooled grant funding, and coordinated development**. The report is structured around a **10-part longitudinal programme running from 2022 to 2032**, including:

- strategic land-use planning
- formation of the Harakeke Industry Alliance
- riparian and land restoration trials
- biodiversity research
- harvesting and commercial viability modelling
- post-harvest processing and market development
- market feasibility and business planning
- demand creation and supply chain development

This makes clear that the business case is not treated as a standalone one-off document, but as **Phase I within a staged industry-building programme**.

4. Land use is central: target under-utilised land, especially whenua Māori

A major takeaway is that the proposed industry is designed around **land that is currently under-utilised, climate-affected, or unsuitable for high-value food production**. The report strongly favours:

- under-utilised Māori land
- floodplains and riparian margins
- wetland-adjacent and restoration landscapes
- land being retired from conventional farming due to climate, erosion, or water-quality pressures

This is presented as both an economic and ethical advantage. Economically, such land often has **low or no historic return-on-capital expectations**, reducing the burden compared with conventional crop investment. Strategically, it allows the industry to expand without displacing productive food systems.

The report also stresses that Māori land may offer a particularly strong starting point because of:

- proximity to suitable ecological conditions
- lower opportunity cost
- alignment with whānau, hapū, and iwi development aspirations
- potential to strengthen cultural, social, and financial resilience over time

The HHH cluster currently includes five core landholding members and associated sites across **Te Urewera, Te Tai Tokerau, Tairāwhiti, Rangitikei, and Wellsford**, with about **118 hectares already identified** for current work planning, while noting broader alliance access to additional land resources beyond this initial cluster.

5. The RRRT model is the report's key design innovation

One of the most distinctive contributions of the report is the **RRRT model — Riparian, Revegetation, Restoration and Transition** planting architecture. This is presented as the preferred land-use model because it attempts to combine:

- environmental repair
- biodiversity design
- resilience to flooding and erosion
- clustered, harvestable Harakeke planting
- access for future harvest and resource use

The report repeatedly contrasts RRRT with conventional environmental planting approaches, arguing that many existing restoration or riparian projects:

- do not consider harvestability
- may use ecologically mixed planting in ways that do not reflect natural clustering
- can lock up potential long-term productive value

RRRT is intended to solve that by embedding **economic productivity inside restoration landscapes**. The document claims this model could create revenue-generating assets while still satisfying ecological and land-repair objectives.

The report proposes different RRRT applications for:

- riparian zones
- revegetation projects
- wetland restoration
- farmland transition

In each case, it argues RRRT offers a more resilient, harvestable, and economically useful alternative to standard restoration planting.

6. The industry case is stronger because knowledge has improved

A major analytical section compares the **past, current, and future state of technological knowledge and production capacity**. The report argues that technical knowledge has improved substantially even where domestic production capacity is still incomplete.

Examples given include:

- harvest and resource modelling improving from 6% to 85% current knowledge
- stripping technology improving from 10% to 65%

- scutching from 30% to 85%
- by-products technology from 75% to 82%
- overall weighted technological knowledge rising from 40.14 to 74.14, with a future target of 87.14

By contrast, actual production capacity remains lower, with current weighted capacity estimated at **41.43**, compared with a future target of **86.43**. This gap is important: the report's argument is not that the full industry already exists, but that the **knowledge base now exists to justify building it**.

7. Processing capability is emerging, but still incomplete

A critical decision point in the report is that **Phase I only models feasibility to farmgate scutched fibre**, rather than assuming a full mature downstream industry from the start. That means the current business case is deliberately conservative in scope.

The report acknowledges that:

- domestic capacity for stripping, scutching, yarn production, and textile weaving is still limited
- offshore support may be needed in the interim
- the business case does **not** include all additional costs that such interim offshore processing could involve

Still, it treats recent technological progress as a major breakthrough. In particular, it highlights **KiwiFibre Innovations' FXM system**, noting that:

- **FXM1** was built in 2023 as a prototype
- **FXM2** was built in 2025 as a significant improvement
- the machine can process about **1,000 kg of Harakeke leaf per day**
- it is designed to separate fibre and green matter into simultaneous product streams
- it may later support automation and computer vision-based grading

This is presented as the first credible 21st-century stripping capability and one of the strongest signs that the industry can move beyond theory.

8. The financial logic depends on yield, diversified revenue, and land cost discipline

The report argues that Harakeke's competitiveness does not depend on being a low-cost monoculture crop. Instead, it depends on three combined advantages:

a. High fibre productivity

The report claims Harakeke delivers **much higher fibre yield per hectare** than comparable fibres. In one comparative table, it estimates:

- Hemp: 1.54 tonnes/ha
- Linen flax: 1.05 tonnes/ha

- Sisal: 1.50 tonnes/ha
- Harakeke: 11.17 tonnes/ha

That large projected yield difference is one of the report's strongest economic claims.

b. Multi-stream revenue

The report consistently emphasises that viability improves when value is captured across:

- farmgate fibre
- scutched fibre
- downstream fibre applications
- by-products such as **extracts, gels, lignans, seed oil**
- associated co-benefits such as **honey, biodiversity assets, carbon, and rongoā**

It explicitly states that **by-products are critical to margins** and that amortisation across multiple outputs is likely necessary for strong long-term viability.

c. Low-cost land strategy

The preferred land strategy is based on low-performing or under-utilised land, especially Māori land, where return-on-capital expectations may be lower than in conventional agriculture. This reduces one of the biggest constraints that would affect conventional horticultural expansion.

d. The business case is deliberately conservative and focused

The document repeatedly notes that its business case is **not a full end-to-end industry valuation**. Instead, it focuses on enough evidence to test whether the industry is viable at a topline level.

Specifically, the core business case:

- models land type and ownership scenarios
- defines planting architecture
- estimates harvest, labour, processing, yield, and cost variables
- develops a resulting model around an 8-hectare hypothetical scenario
- only takes financial analysis as far as farmgate/scutched fibre

It explicitly excludes full financial gains from midstream and downstream opportunities, even though those are discussed elsewhere as strategic upside. That means the feasibility conclusion is intended to be robust **even before all future value streams are realised**.

9. Māori worldview is not peripheral — it is treated as foundational

A significant feature of the report is that Te Ao Māori is built into the industry logic rather than added as context. Harakeke is presented as:

- a taonga species
- structurally symbolic of whānau and whakapapa
- part of Māori material, medicinal, and weaving traditions
- an opportunity to protect and operationalise mātauranga Māori, tikanga, and access-and-benefit-sharing principles

The document also discusses:

- provenance
- taonga protection
- IP and Kaitiakitanga
- youth pathways
- the role of marae
- support for raranga weavers and rongoā practitioners
- the importance of avoiding extractive or culturally detached industry models

This is one of the report's clearest strategic positions: the future industry is intended to be **commercially viable precisely because it is culturally grounded**, not despite that grounding.

10. The report's overall conclusion

The strongest overall conclusion is that the industry appears **feasible in principle and directionally viable**, but only if several conditions are met together. These include:

- strong collaboration across Māori, farming, research, and industry actors
- government and institutional support for R&D, product development, and market development
- suitable land and planting resource
- real market demand
- continued development of processing capability
- industry standards, grading, and certification
- an organised industry body capable of coordinating long-term development
- a willingness to treat Harakeke as both an economic and environmental asset

The tone of the report is confident but conditional. It does **not** say the industry is already mature or guaranteed. Instead, it says the foundations now exist to proceed with confidence into the next phase.

Open questions and unresolved issues explicitly signalled in the document

The document still leaves several important matters unresolved or deferred to later phases:

1. **RRRT still requires real-world validation**

The report repeatedly says the RRRT model needs further testing in **Phase 4 Riparian and Land Restoration Trials**, including performance, design substantiation, environmental metrics, and harvest outcomes.

2. **Production capacity still lags behind knowledge**

The report is clear that domestic harvesting, stripping, scutching, yarn, and textile capacity is still incomplete, even if technical understanding has improved.

3. **Downstream value is recognised but not yet fully costed**

The business case intentionally stops at **farmgate/scutched fibre**, meaning much of the proposed upside in textiles, composites, extracts, and finished goods remains outside the current financial model.

4. **Market development is still an active requirement**

The report assumes demand opportunity exists, but also makes clear that **customer development, partnership formation, and demand creation** remain necessary.

5. **Government and research support are important but not secured at full scale**

The document repeatedly identifies co-funding, research support, and institutional participation as enabling conditions rather than guaranteed inputs.

6. **Several feasibility metrics are still partly anecdotal or indicative**

In comparative scoring tables, the report notes that some weightings are perceptual or indicative and would need more rigorous scientific or financial validation outside the scope of Phase I.

7. **Legal, IP, compliance, and benefit-sharing frameworks need further development**

The report flags access and benefit sharing, taonga protection, Nagoya-related considerations, WAI 262 implications, industry contracts, and ownership structures as critical but not yet fully resolved.

In confidence and disclaimers have been defined.

Mark Henderson

Lead Facilitator