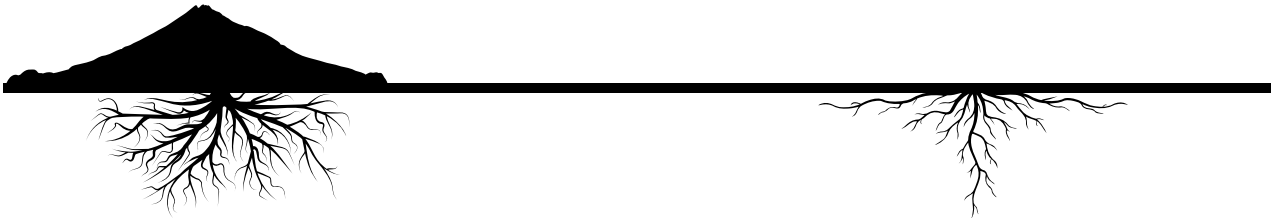


# Para Ika: Leveraging the learnings

*Te toto o te tangata he kai, te oranga o te tangata, he whenua, he oneone – While food provides the blood in our veins, our health is drawn from the land and soils*



**The science of soil regeneration and soil ecosystems explained, adapting these learnings to grow Para Ika into a viable and sustainable approach to soil health.**

**By Ranui Maxwell**

When it comes to our natural environment, whakapapa has always described the deep and intrinsic connections between humans and the natural environment including plants and animals. Our spiritual connection is engrained in pūrakau (stories) such as the story of Papatuanuku and Ranginui which further articulate the connection between humans and our natural environment.

**We acknowledge the relationship between Māori and the soil was strong and reciprocal, stretching back to the time of creation. Papatuanuku, Ranginui, whakapapa, whenua, ecosystems, habitats, taonga and soil. It is all interconnected. In terms of the narrative, the complete life cycle starting, with birth and ending in death was frequently acknowledged. Hine-ahu-one, also known as Hine-hau-one, she was the first woman created by Tane-nui-a-rangi and Io from the red clay at kurawaka. So there we already have reference to soil from our story of creation of Hine-ahu-one. And it is the red clay at Kurawaka. Hine-nui-te-pō, goddess of the underworld Me matemate-a-one’ (let man die and become like soil)”.**

Dr Nick Roskrug, said it best when referring to the relationship Māori have with the soil - “Māori recognise a resource which has been around in aeternum (or forever) and which we as humans endlessly draw from for our sustenance and the wellbeing of the people as a whole.”

**“It is an intrinsic element as important as the air we breathe or the water we crave.”**

Healthy soil is crucial for our environment. Soil provides the optimal environment for plants to grow, it ensures quality access to water and nutrients required for the kai that we eat, and it sustains the health of the land we live on.

The prototype in action has involved collecting rau pokepoke (leaf mould), rainwater and all the leftover parts of the fish in the plastic bucket. The outcome after the mixture had been fermenting for several months, Mamera and Mark began the process of filtration, meaning you only come away with a liquid. They applied the mixture that they had watered down to their maara, noting the ratios.

The successful outcome of utilising Para Ika on their maara have led to the first steps in a multi-phase prototype that now sees the Healthy Families East Cape team working alongside Mamera and Mark, deep diving into the western science to further validate the prototype, tipuna wisdom and techniques,



Para Ika is a community-led initiative that was brought about by a whānau who wanted to solve the problem of fish waste.

For Healthy Families East Cape Communications Innovator, Mamera Patchett and her husband Mark, have experimented, guided by tīpuna wisdom and approaches to addressing soil health. In turn strengthens an approach to creating kai-secure communities.

Last month we told the story of them wanting to use all parts of the fish, including the best way to dispose of the discarded fish parts. Through research and community and whānau engagement, Mamera uncovered that only 33 % of a whole fish is actually used for eating, meaning 67% is not typically used like the fish heads, offal and frames.

After further research and experimentation, they then used a plastic bucket and collected rau pokepoke (leaf mould) from their area. Along with collecting rain water, they added all of the fish parts to the bucket in the hopes that they would create a fish fertilizer. After fermenting for several months and creating a lock mechanism on the bucket, they started testing the fertilizer on their maara with surprising results. When we talk about understanding and promoting healthy soil, we're essentially talking about safeguarding the very foundation of our existence. It's not just about soil; it's about the health of our rivers, the quality of our food, the strength of our forests, and ultimately, the well-being of our communities.

It's a ripple effect. Healthy soil equals healthy rivers, healthy soil equals healthy food, and healthy soil equals healthy people. It's about fixing the source of many of the pressing problems we face now more than ever. We need to ensure a sustainable and thriving future for all of us.

In an effort to understand the research and science behind soil health, the Healthy Families East Cape team have begun working with Jacopo Orazi, Agro-Ecologist with Radice Soil Solutions.

Soil and agriculture science have led Jacopo to spend a lot of his time looking into microscopes at soil samples, but he says it is vital work when it comes to understanding the biodiversity and life that resides in soil.

**“In my humble opinion, healthy soil is like the lifeblood of our planet, a hero working beneath our feet.**

**“It's not just dirt; it's a dynamic ecosystem that sustains life in numerous ways. It is the foundation of the building, strong and supportive.”**

Mamera was both nervous and excited at the opportunity to view the Para Ika prototype under the microscope.

**“Watching it under the microscope, I was nervous about not knowing what we might find. Now knowing its potential, I'm thrilled! I can see the impact this could have, for our community and whānau”.**

**“What I can see is that Para Ika as it is right now is realised through fermentation that has created a rich environment for lactobacillus” explains Jacopo.**

What Mamera and her whānau have created through their current process is not a fertilizer but a rich combination of microbes that can be used as a raw product.

Lactobacillus – is a genus of bacteria commonly found in soil, sourdough and yoghurt. The microbes will help cycle the nutrients in the soil making them more available to the plant. Para Ika's approach through testing under the microscope affirms not only the product as a potential solution for enhancing soil quality but also the need to ensure te ao Māori solutions that celebrate Mātauranga are further explored for kai and soil sovereignty.

Testing under the microscope of Para Ika has affirmed and validated its potential as a viable solution for enhancing soil quality.

Jacopo also confirmed that Para Ika's potential comes from its effectiveness in addressing soil quality, as well as its potential unique advantage over commercial alternatives.

**“Your product is teeming with life, especially when compared to any off-the-shelf alternatives.**

**“Frankly, it just makes sense, if our goal is to revive life in our soil, using a local product that's bursting with life beats something sitting on a shelf for weeks or months sealed in a container” says Jacopo.**

On observation most soil samples that Jacapo analyses have been stripped to the bare minimum of diversity, affecting the functionality of all soil and plant eco-systems. This intervention process has forced us to rely on synthetic input to support soil function and plant systems working.

Healthy Families East Cape are keen to explore, alongside Mamera and Mark, the development of specialised products from Para Ika, tailored to address specific soil and plant eco-system needs. When it comes to kai, our food systems rely on healthy soil, to provide filtration and purification of the water we drink or irrigate our crop with. Healthy soil ecosystems provide nutrients necessary for our forests to grow, it stores carbon from the atmosphere and acts as a mitigation tool for climate change and resilience to disaster.



**The Healthy Families East Cape Team pictured with Jacopo Orazi of Radice Soil Solutions.**

A single handful of soil contains millions of individual living organisms.

Healthy Families East Cape thanks Jacopo for his support and commitment to the land, soil and its future.

**“I congratulate your team for your dedication to restoring soil health and minimising waste. It's an admirable commitment that aligns with the larger goal of nurturing our environment.”**

Healthy Families East Cape is excited for the Para Ika prototype to further develop and the potential to create sustainable practices for fish disposal for marae, whānau and communities.

If you would like to know more about this kaupapa email:  
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