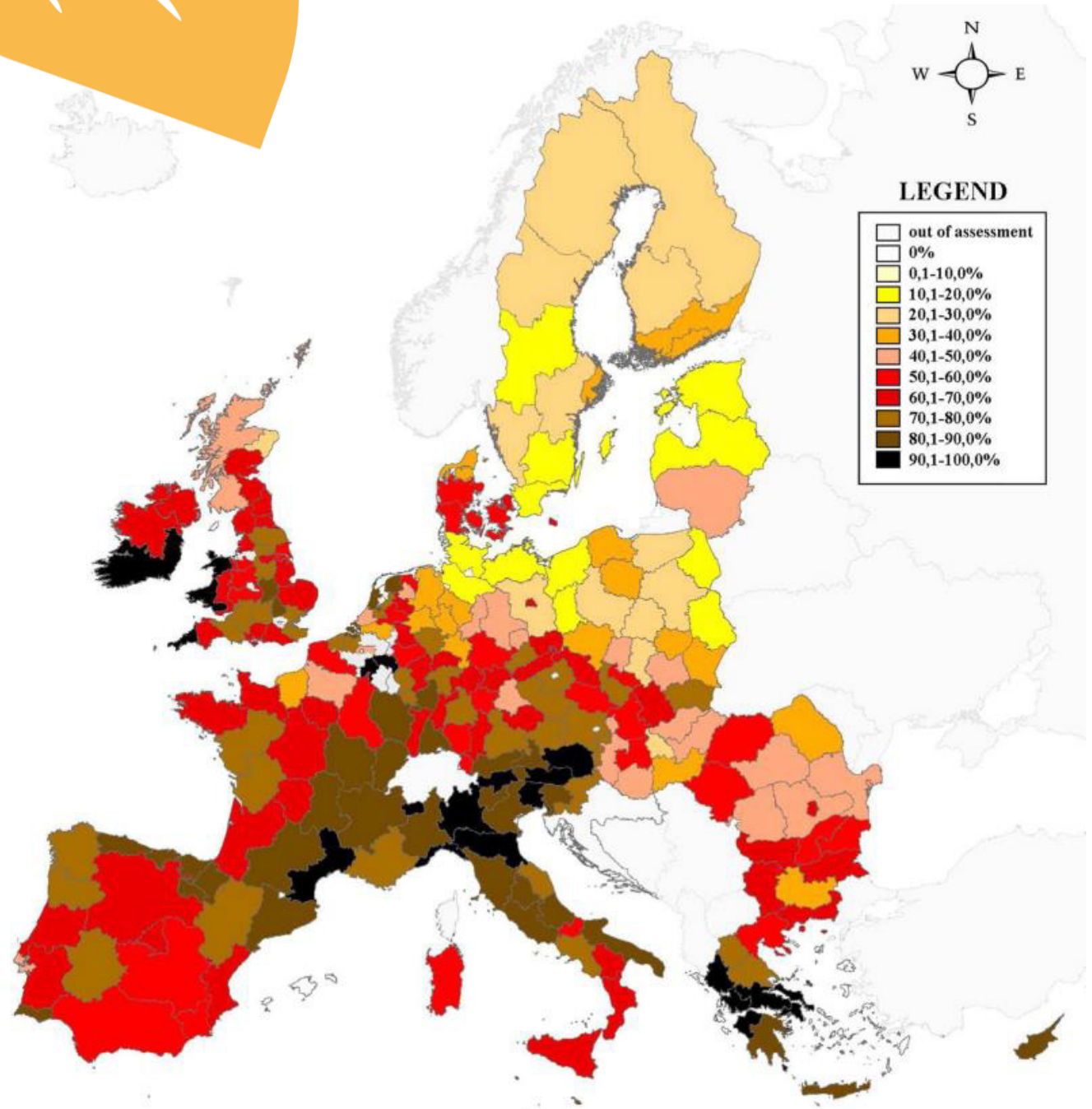

RemePhy
TECHNOLOGIES
Harnessing nature’s power to clean our soil
IMPERIAL

Heavy Metal Contamination: A major global problem

- More than **50 bn** tons of polluted soil generated per year globally
- Within **Europe** remediation can cost more than **€18 bn**
- Environmental catastrophes and **fines** exceeding **$15 bn**

Heavy Metal Contamination: A major global problem



Our Solution

Metal contaminants exist in the soil

Bacteria that colonise the plants roots take up the metal

This causes it to accumulate in the plants

By harvesting the plants the pollutants are removed

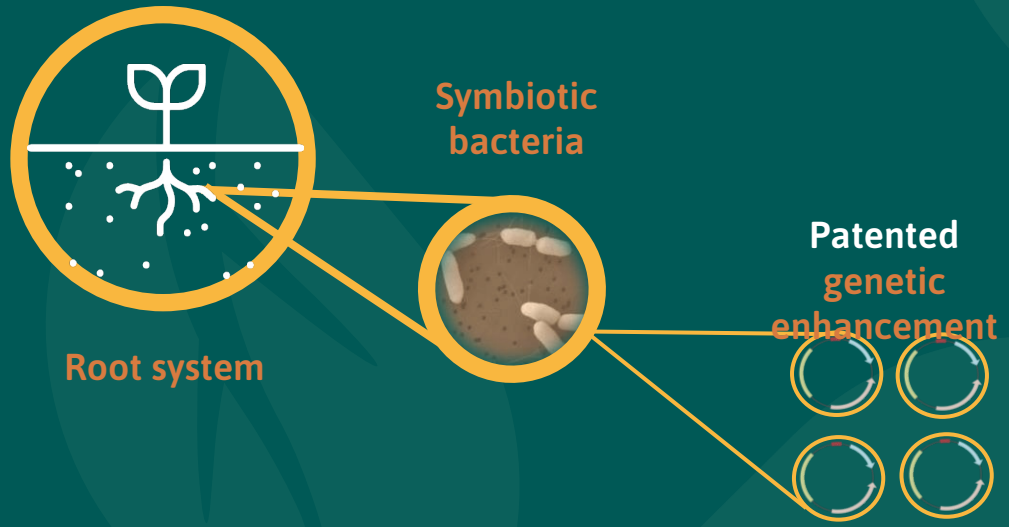
Metal and biomass can then be recycled

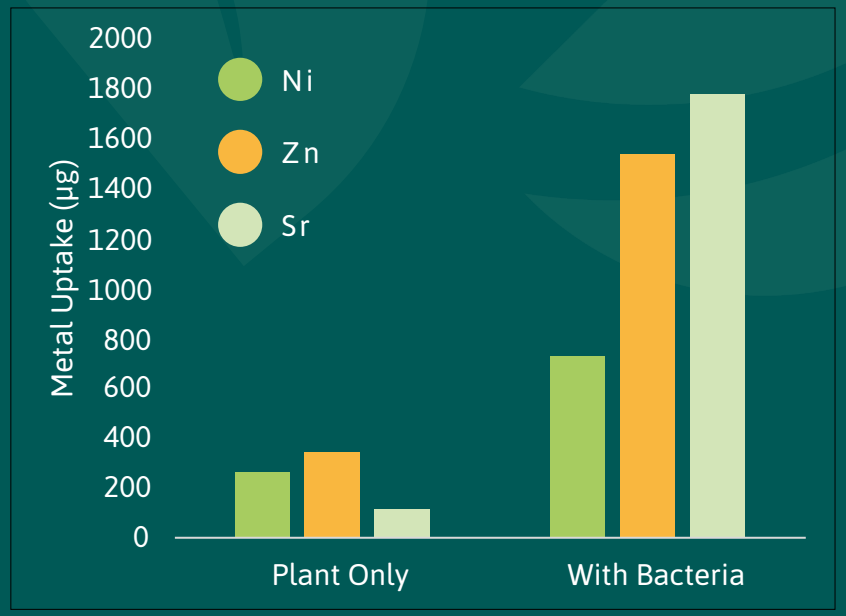
This sustainable solution leaves cleaner soil

Our Technology

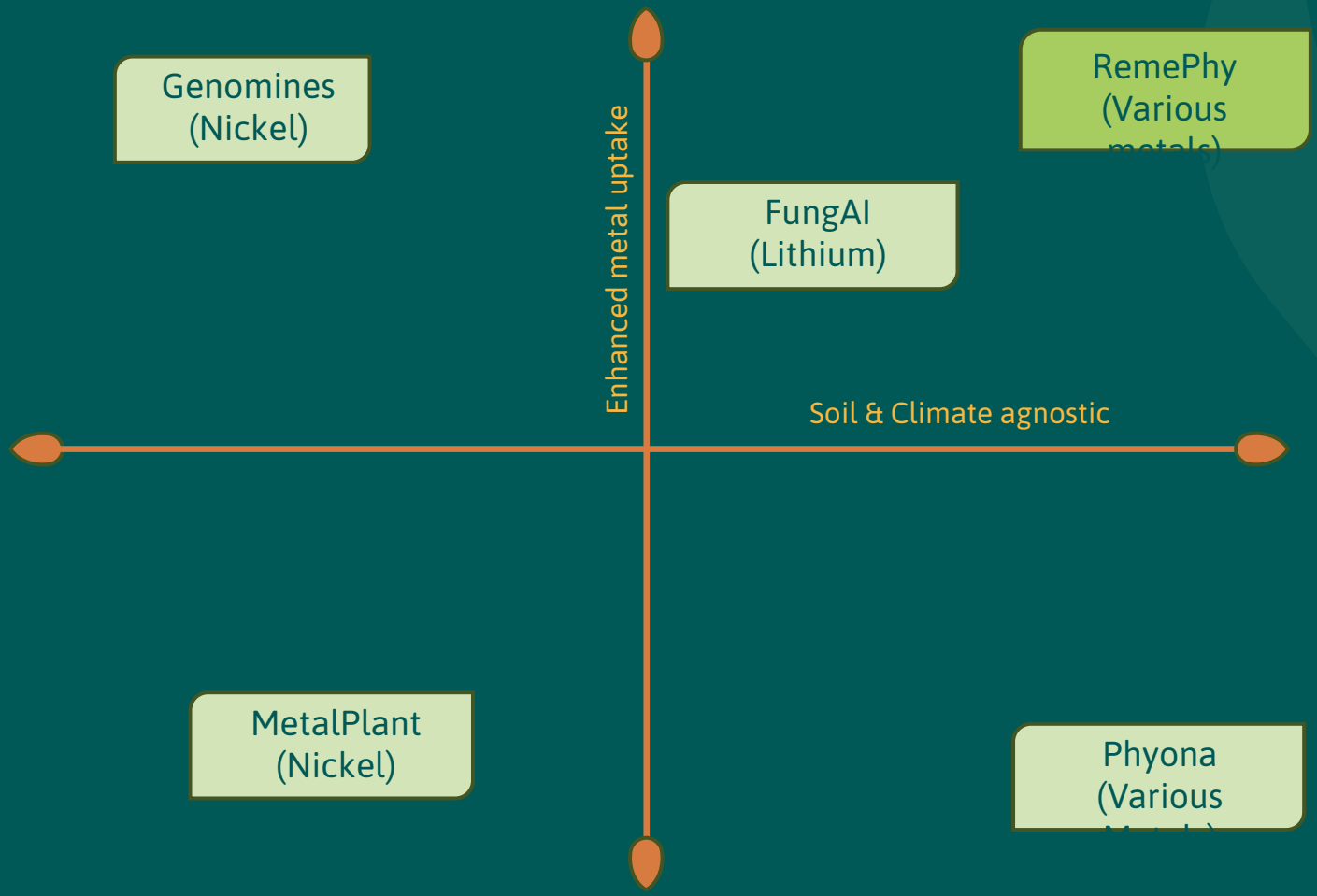
Applying bacteria to enhance metal accumulation in the plant.

- Bacteria **increase** metal uptake **10x**
- Likely for **15x** accumulation with a novel genetic variation
- Verified uptake of **Zn, Ni, Sr** and expecting Mg, Cd, Fe, Cu, Co and Sn
- Soil and geography **agnostic**
- Sustainable biomass separation and metal extraction





Competitive landscape



In soil remediation the **key parameter** is the **mass** of extracted metal **per tonne** of treated soil.

RemePhy optimises this parameter by:

1. Maximising the number of metal species absorbed.
2. Enhancing uptake by applying genetically enhanced bacteria.
3. Providing a solution that works in a broad variety of soils and for different types of process wastes.

Commercial strategy

PHASE 1:
LOCAL PILOTS

PHASE 2:
REGIONAL LAUNCH

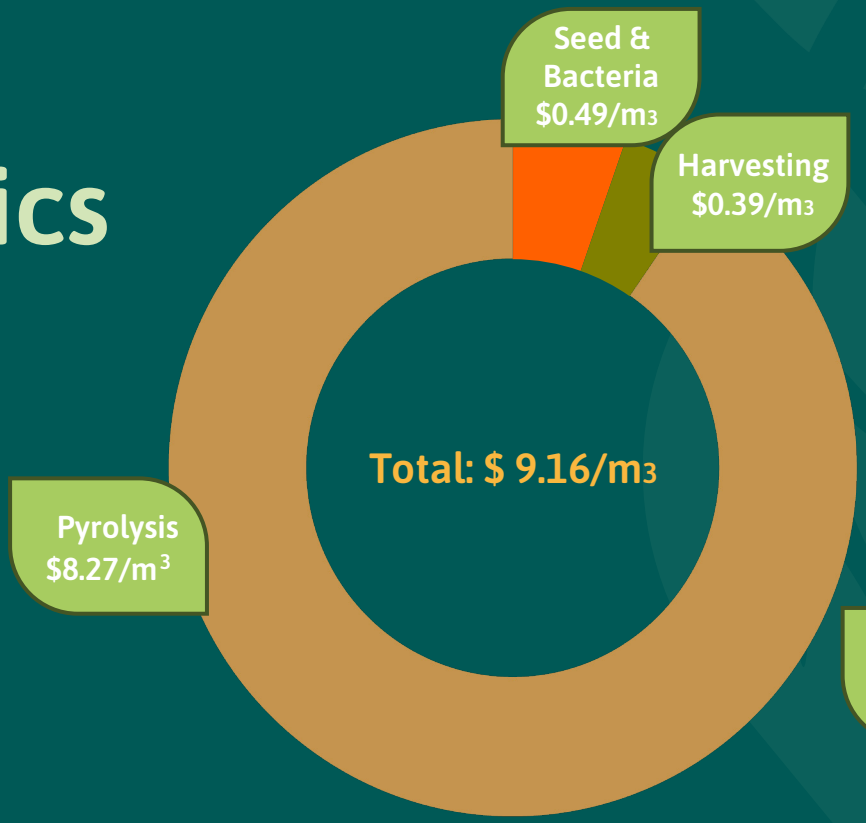
PHASE 3:
GLOBAL SCALE

- Targeting early adopter territories ▪ Implementation partnerships with remediation consultancies
- Local partnerships to facilitate pilot testing ▪ Access to sample soils and test sites ▪ Demonstrate concept and financial viability

- Deployment with the largest mining asset owners globally
- Expanded library of metals, plant & soil types
- Partnerships for delivery
- Focus on licensing model for maximum scale & exit potential

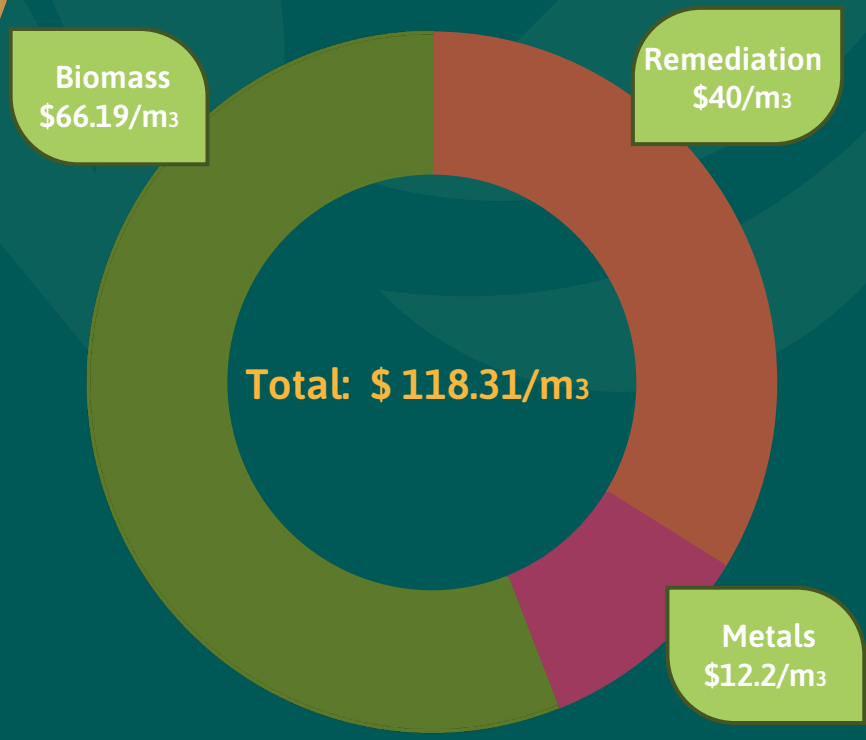
Unit economics

- Combining soil remediation with the extraction of metal provides an essential cost offset for an inevitable environmental liability
- By increasing the extraction efficiency, the phytoremediation process is transformed from a economic burden into a significant revenue line



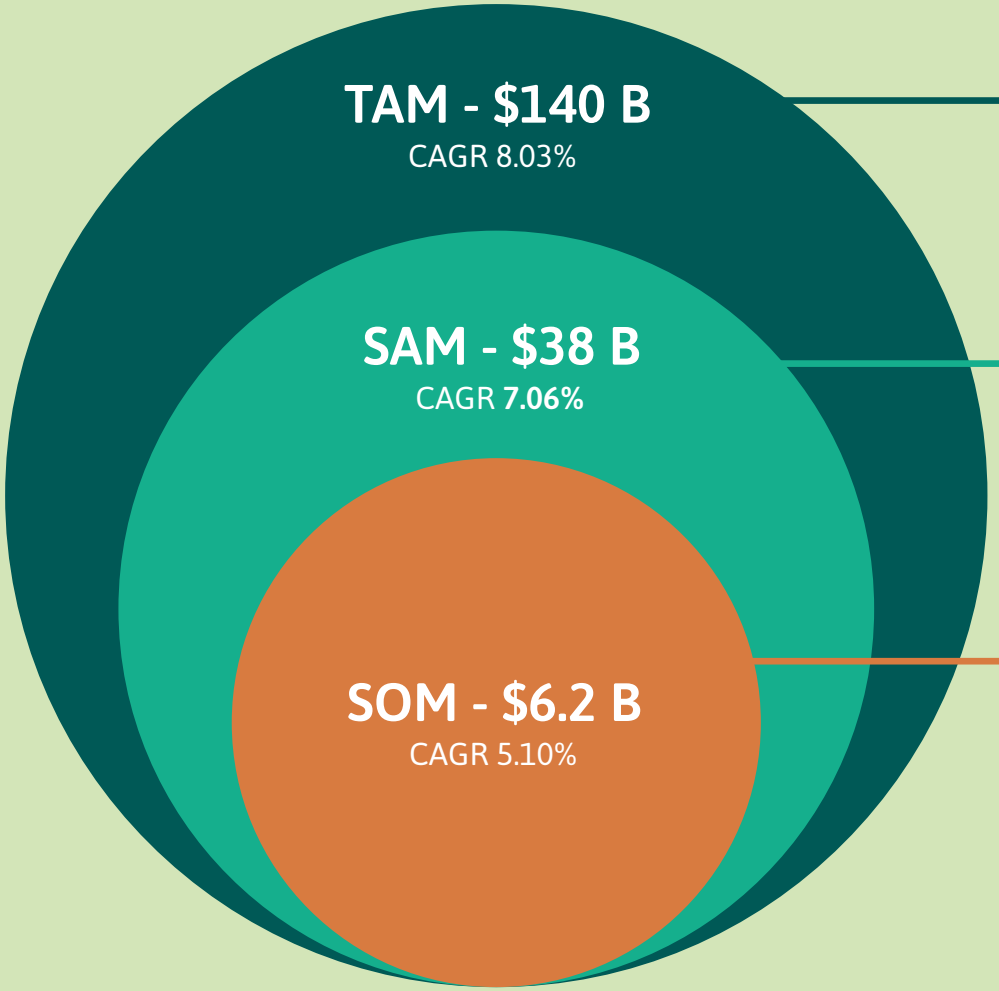
Process cost

Lead-zinc mine Danzhai, China Full metal recovery: 8 years



Process revenue

Market Potential



Total environmental remediation market

Soil remediation

Phytoremediation

RemePhy operates within this market and provides a significant increase in process efficiency compared to traditional methods

Why Now?

- **Increasing pressure** from governments for more sustainable mining practices
- Increasing demands on **land use** due to **climate change** and an increasing **global population**
- Discovery that RemePhy's technology can address limitations of current phytoremediation solutions – **time inefficiency**

Team

Founders

Franklin Keck

PhD (viva completed)
Plant Biotechnology

Dr Ion Ioannou

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Synthetic/Chemical
Biology

IMPERIAL

Cambridge Future Tech

Deep tech
Venture Builder

Prof Karen Polizzi

Professor of
Biotechnology Imperial
College London

Jake Harris

Minning Research &
Innovation Specialist
Unearthed

Advisors

Land remediation/Mine rehabilitation cases

Future mine closures: Analysis by CSIRO projects the closure of nearly 240 Australian mines by 2040, estimating an annual expenditure ranging from $4–8 billion on mine rehabilitation and closure.

Ongoing industry demand: Over 2,220 active mines and tens of thousands awaiting rehabilitation highlight the persistent demand for innovative solutions in Australia's mining sector.

Land remediation/Mine rehabilitation cases

CANADA

Northern Abandoned Mine Reclamation Program:

- The program manages the remediation of 8 abandoned mines in the Yukon and Northwest Territories.
- $2.2 billion allocated over 15 years to remediate the largest, most complex contaminated sites in the Yukon and

Northwestern territories.

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