CRC TiME
Transformations in Mining Economies

Project Leader: Dr Todd Erickson
todd.erickson@uwa.edu.au

Program Lead: Dr Agnes Samper
agnes.samper@crctime.com.au

Project 3.13
Australian Seed Scaling Initiative: Large-scale deployment of diverse, enhanced seed mixes using customised precision seeding technologies

Why the project?

Seed-based rehabilitation is often essential to restoring land after mining is completed.

However, there are various challenges arising in current practices, leading to underperformance, seed loss and higher costs. As climate change reduces the availability of viable seed stock, these challenges are likely to be exacerbated.

Accordingly, it is paramount these challenges are addressed, and the efficiency of ecosystem rehabilitation seed performance across mined and agriculture landscapes improved.

What will the project do?

The project team has progressed a system to suitably treat and precision sow diverse seed mixes via purpose-built precision-seeding machinery – increasing success rates by up to 40 per cent.

The project will test and demonstrate this approach by deploying the machinery and seed management strategies across a range of highly altered systems found in mined landscapes and severely degraded agricultural environments. Mined landscapes include bauxite landscapes in Western Australia.

In addition, the project will assess the transferability of the technology to other landscapes and develop the case for parallel testing multiple locations on a national scale.

What are the project objectives?

In a two-stage approach the project will:

- demonstrate the applicability and versatility of the precision-seeding machinery
- develop a proposal for the Australian Seed Scaling Initiative.
- assess the transferability of the technology to multiple different landscapes
- establish the Australian Seed Scaling Initiative, involving deploying the package of seeding techniques across a range of commodities, companies and environmental contexts.

What will the project deliver?

The project will:

- develop a strategic program to extend the precision-seeding machinery to mining partners and regions across Australia
- deploy the precision-seeding package and establish demonstration site network longitudinal studies focussed on seed-treatment development, mechanised seeding efficiency, and quantification of establishment success and rehabilitated vegetation trajectories.

Who are the end users?

Project findings will be useful for mining and mining engineering, technology and services companies, environmental organisations and others involved in land restoration. Findings will also be applicable to the agricultural industry.

Timeline

2022 - 2025

How does this align with CRC TiME Impact objectives?

Mines are closed in ways that deliver social, economic and environmental value

Closed sites are repurposed to enable a faster transition to diverse and resilient local economies

Mine closure business solutions drive new commercial and/or regional closure opportunities

Continued investment in Australian resources

Policy, decisions and management systems reduce risks

Project Partners

Partner Participants

Alcoa, Department of Biodiversity Conservation and Attractions, The University of Western Australia

Advisory Participants

BHP, Rio Tinto, Peel Development Commission, Peel-Harvey Catchment Council, Rangelands NRM WA

Australian Government
Department of Industry,
Science and Resources

AusIndustry
Cooperative Research
Centres Program