

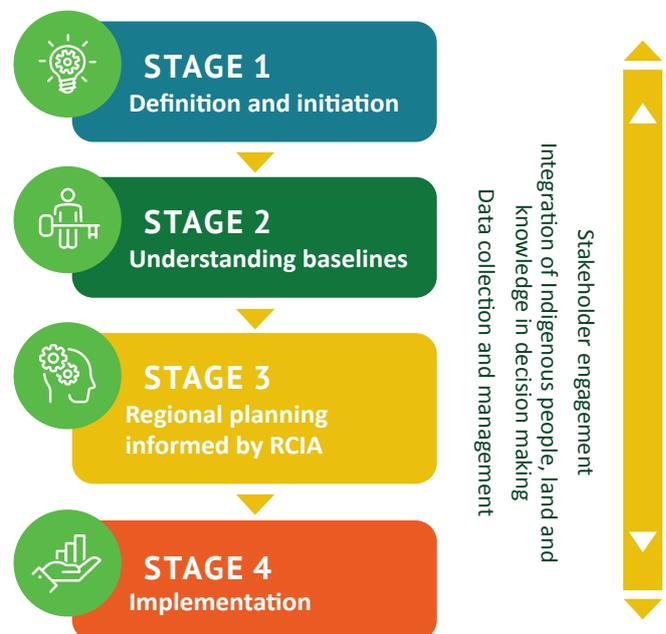
Towards a framework for regional cumulative impact assessment

Over the next 25 years, up to 50% of Australia's large-scale mines are expected to close. Mine closures and regional transitions to post-mining economies will have major environmental, economic, and social impacts, particularly in rural and Indigenous communities that manifest at a regional scale. The cumulative impacts of mining and mine closure create both opportunities and limitations for future land use and development pathways.

This research focused on understanding the key components of a regional cumulative impact assessment framework to support mine relinquishment, post-mining land use planning and regional economic development.

KEY FINDINGS

- Synthesis of the literature showed there are currently four key ways of conceptualising cumulative impact assessment (CIA):
 - Form 1: Predictive CIA undertaken as part of regulatory environmental impact assessment
 - Form 2: Evaluative CIA to understand baseline conditions within a region
 - Form 3: Predictive CIA undertaken to inform regional planning
 - Form 4: Ongoing evaluative CIA to monitor and manage cumulative impacts within a region.
- There are a number of features of regional cumulative impact assessment (RCIA) that need to be considered in the design: governance structures, stakeholder engagement models, assessment methodologies and data sharing platforms that enable stakeholders to access data.
- A high level cumulative impact assessment framework was developed highlighting how baseline conditions are not static, deriving from the accumulated past impacts of mining, continuing legacy impacts as well as 'reasonably foreseeable' future impacts. Regional planning and RCIA are synergistic for post-mining futures.



Foundational Framework for RCIA

Despite recent advances in regulation, technology, and methodologies for assessing cumulative impacts there is no comprehensive framework or guidance for RCIA for mine closure. In addition, we lack the tools and necessary governance structures, for predicting, assessing, and managing the cumulative impacts associated with mine closure at a regional scale.

Cumulative impacts are:

"The successive, incremental and combined impacts (both positive and negative) of an activity on society, the economy and the environment. They can arise from the compounding activities of a single operation or multiple mining and processing operations, as well as the interaction of mining impacts with other past, current and future activities that may not be related to mining (Franks, Brereton, Moran, Sarker, & Cohen, 2010, p. 1)."

THE CHALLENGE

While mine closure is regulated and managed at the site level, the environmental, social, economic, and cultural impacts of closure are cumulative and are experienced at the regional scale. Cumulative impacts may be additive or synergistic and can be either positive or negative.

THE OPPORTUNITY

To safely relinquish sites and support post mining transitions, we need to both understand and manage legacy risks by considering the cumulative impacts. A successful post-mining transition requires a collaborative process involving a wide range of stakeholders, including Traditional Owners, that looks back to ensure that legacy issues are appropriately managed, and looks forward to chart positive, economically-diverse futures for mining regions and communities.

Facilitating mine closure at the regional scale in Australia will require diverse skill sets across social, economic, and environmental disciplines, as well as an understanding of how these interact at a regional scale. CRC TIME brings together multiple perspectives, disciplines, and stakeholders in a unique platform catalysing a step change in understanding complex interactions in managing mine closure at the regional scale.

OUTCOMES

This project delivers state-of-the-art knowledge about current practices, regulatory status, benefits, challenges, barriers, and required attributes of RCIA. It was designed as the first stage in developing a dynamic digital platform for assessing cumulative environmental, economic, and social impacts of mining and mine closure for Indigenous and non-indigenous Australians. Collective uptake of this platform will see it used in the management across the life of mine and codified in regional plans, leading to improved mine closure and relinquishment, a reduction in the abandonment of mines, and greater support for regional communities transitioning to post-mine sustainable economies with land uses for socio-economic benefits.

NEXT STEPS

Future projects will work towards establishing process methodologies and governance models for RCIA that can consistently be applied across Australia. Specifically, it will aim to:

- Develop methodologies for the identification, prediction and assessment of environmental, social, economic, and cultural impacts associated with mine closure and regional planning for post-mining futures, including understanding how impacts interact at a regional scale.
- Identify appropriate stakeholder engagement models for RCIA, involving education as well as consultation, which are culturally sensitive and recognise the special role of Traditional Owners.

- Propose leadership and collaborative governance models to identify coordinating agencies, funding models and legislative head powers and regulatory frameworks to facilitate RCIA for mine closure.

PROJECT PARTICIPANTS

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PROJECT PARTNERS

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PROJECT PUBLICATIONS

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ABOUT US

The Cooperative Research Centre for Transformations in Mining Economies (CRC TIME) brings together over 70 leading mining and mining service companies, regional development organisations, State and Commonwealth governments, research partners, community and indigenous groups. Our unique coalition brings scale and coordinated investment into innovative research that addresses the complex challenges underpinning mine closure and relinquishment.

We acknowledge the traditional custodians across all the lands on which we live and work, and we pay our respects to Elders both past and present.