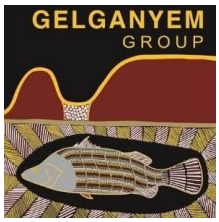
CRC TiME
Transformations in Mining Economies

A multistakeholder and rightsholder participation framework to guide repurposing of mine sites, and the evidence base

FINAL REPORT – PROJECT 1.10

14 September 2026

Project partners and Advisory Group members



Grant Sarra Consultancy

This project is supported by the Australian Government Department of Industry, Science and Resources through the Cooperative Research Centre for Transformations in Mining Economies.

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ISBN 978-1-922704-61-0

Date of publication
14 September 2026

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Citation
Holcombe, S., Parmenter, J., Dalaibuyan, B., Worden, S. and Bourke, P. 2026. *A multistakeholder and rightsholder framework to guide repurposing of mine sites, and the evidence base*. CRC TiME.

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Acknowledgements

Sarah Holcombe led the project, curated this report and wrote some sections, Joni Parmenter developed the framework and prepared the guidance, Byambaa Dalaibuyan and Sandy Worden undertook the literature review, and Pam Bourke facilitated the three on-line workshops, the Darwin workshop and provided expertise on facilitated decision-making processes for the framework. Thanks also to Tom Measham who identified the gap that the project has addressed and discussed the intent of the project with members of the CSRM team who then developed the proposal. We also thank Corinne Unger for her review of elements of the report and her forensic attention to detail, Karin Fogarty for preparing the project workshop scenario held during the CRC TiME Darwin Forum and Natalie Brown for her review.

The research advisory group participants included:
Kia Dowell
Grant Sarra
James Purtill
Karin Fogarty
Graeme Nielson
Vern Newton
Corinne Unger
Rosemary Joiner
Ross Browning
Bryan Maybee

We also wish to acknowledge the engagement of the 50-plus participants at the project workshop during the CRC TiME Forum in Darwin 2025.

Executive summary

Introduction

This 12-month project sought to develop a framework for community groups, the mining industry, government, investors and other actors to identify, consider and engage with potential repurposing options.

The Mine Repurposing Framework is a participatory process for identifying rightsholder and stakeholder values, aspirations and preferred repurposing options after mining.

The application of this framework is inherently dependent on the specific context in which it is used. It is designed to be flexible, allowing users to adapt the process to reflect the unique circumstances of each site. In practice, this means that some steps may be skipped, combined, or undertaken in a different order, depending on the needs, priorities, and stage of the project.

Method

This project drew on expertise from across the Centre for Social Responsibility in Mining (CSRM), where five staff had distinct responsibilities for specific components. The framework and guidance were initially detailed in an interim report (Parmenter et.al., 2026).

We held regular team meetings and all came together to workshop this final report. The project methodology had three key components, which included:

1. Extensive desktop literature review
2. Establishing a research advisory committee which met three times
3. Holding a multistakeholder workshop to gain qualitative data and sense-test the draft framework at the 2025 annual CRC TiME forum.

Key findings

- **Context matters:** Only considering consultation, participation and consensus building (objective 2) would have failed to deliver a robust framework and guidance. The framework recognises that the regulatory environment and mining context are complex and challenging.
- **Applicability across diverse environments:** The framework has been designed to be flexible, allowing users to adapt the process to reflect the unique circumstances of their site. In practice, this means that some steps may be skipped, combined or undertaken in a different order, depending on the needs, priorities and stage of the project.
- **Diverse views:** Rightsholders and stakeholders will have diverse views on participation processes, decision-making and repurposing options. Diversity of views was considered in designing the framework.
- **Project governance:** The multi-actor advisory panel we established to develop the framework and the multi-expert workshop held at the 2025 CRC TiME forum was integral to the veracity of the project outcomes.

THE FRAMEWORK

The framework is laid out in four phases, preceded by an initial pre-planning phase designed for the initiator of the process, though support from the existing mining company and government to source data will be required. The framework can act as a standalone resource document. The four phases are:

0. **Pre-planning:** This phase may be led by any party, but typically requires support from the mining company or government, alongside internal company pre-planning.
1. **Governance and process setup:** Strong governance and a clear implementation framework are essential to manage risk, align rightsholders and stakeholders, and deliver a sustainable long-term transition.
2. **Scoping and visioning:** People engage meaningfully when the process is designed *with* them, not *for* them.
3. **Options development:** The 7 Capital Framework is a holistic decision-making model that evaluates projects or options across seven interconnected forms of capital to ensure balanced, sustainable outcomes.
4. **Project preparation:** A prospectus that includes consideration of community acceptability risks provides confidence to potential investors.

1 Introduction

Determining and enabling optimal post-mining land use (PMLU) remains a challenge for the mining industry, as it depends on factors such as the site's location, final landforms, environmental considerations, infrastructure, rightsholder and stakeholder interests, community values and expectations, and regulatory requirements.

Nevertheless, proponents are increasingly expected to engage with repurposing opportunities to ensure that a positive legacy is left after mining for local communities, and other stakeholders and rightsholders. PMLU and repurposing are related but distinct concepts. PMLU defines the approved end-state that rehabilitation is intended to achieve, whereas repurposing focuses on developing new opportunities and value from former mine sites beyond their original mining function. The current regulatory framework rarely provides a pathway or any certainty to industry or developers regarding possible repurposing of mine sites. Likewise, closure planning seldom includes repurposing as a central objective because mine closure frameworks are primarily designed to ensure that mining companies meet their statutory obligations to rehabilitate land to a safe, stable, non-polluting condition capable of supporting an approved post-mining land use.

Consideration of repurposing opportunities is relevant to all stages of mine-life: from development and construction, to operating mines, in transition to closure, closed or abandoned. It requires site characterisation, expertise and knowledge of mined land capabilities and limitations, as well as the viability and sustainability of repurposing options such as energy generation and storage, tourism, recreation, and agriculture. While technical expertise for repurposing scenarios may be provided by subject matter specialists, it is essential to work with diverse stakeholders and rightsholders, including Traditional Owners, state and regional governments, and local communities to facilitate a productive dialogue on land use alternatives, decisions and partnerships for successful implementation.

Significant gaps exist between high level discussions of repurposing principles and the on-ground realities. It is often those people with local and/or regional interests and knowledge who have the most at stake and may have considered the most appropriate and compelling repurposing scenarios. When these interests are not engaged in inclusive and meaningful conversations about repurposing, outcomes are unlikely to be aligned with community and regional needs and aspirations. Australian and international experience show that this can create ongoing liabilities for companies and government to manage unsustainable PMLU outcomes, community pushback, project delays and cost blowouts. In light of this experience, this project explored the following questions:

- What are the most appropriate mechanisms to enable consideration and inclusion of diverse expectations and interests in a repurposing process?
- When is the most appropriate time to bring in external technical expertise (e.g. environmental science, geo-chemistry, business development)?
- What processes and media are required for the effective and inclusive communication of complex information?
- What are the most effective decision-making models for reaching consensus in this multi-actor context?

Addressing these questions in a systematic framework can provide a tool for industry, government, and communities to support the delivery of a feasible and sustainable post-mine outcome. The objective of this project is to address these gaps in knowledge and practical implementation and to develop a multistakeholder participation framework to guide repurposing of mine sites, based on a desktop study.

1.1 Project objectives

This 12-month project sought to develop a framework to support practitioners – including those in the mining industry, government, investors and community groups – to identify, consider and engage with potential repurposing scenarios. It addresses the "notable gap in mine closure between policy and regulatory settings, and actual on-the-ground performance" (CRC TiME, 2023). The framework provides a systematic approach to guide multistakeholder participation processes and decision making for identification of potential repurposing alternatives for mine sites, ensuring that regional and local interests and aspirations are at the core of scenario building, while also enabling the consideration of appropriate risks and opportunities associated with alternative PMLU options.

What are the project objectives?

- Develop a framework to guide an inclusive, multistakeholder participation process that enables a diverse range of rightsholders and stakeholders to consider potential repurposing scenarios.
- Provide guidance on the most appropriate mechanisms to use for local and regional consultation, participation and consensus building.
- Ensure that the mechanisms and governance processes enable a bridge between high level repurposing principles and on-ground realities to ensure the delivery of a post-mine outcome that best serves local/regional interests, while reconciling with regulatory obligations and expectations.

Our approach was not to duplicate existing processes, but rather to provide specific and targeted mechanisms to support and 'plug into' closure planning for locations *where there is consideration of repurposing.*

1.1.1 Project context

Repurposing most commonly occurs after or alongside other activities in the closure process. And it quite specifically refers to developing alternative land uses – beyond those that were in place prior to mining – which are most commonly pastoralism or grazing. We understand this term commonly refers to the (re)establishment of multiple land uses as re-purposed mine sites are typically re-used for more than one purpose, indicating that though the previous mining land-use may have been singular, post-mining transitions are not (Holcombe & Keenan, 2020).

The 2025 ICMM Handbook *Multistakeholder Approaches to socio-economic transitions in mining* states that*:* "When possible, repurposing should be a preferred option in order to generate new economic activities for local stakeholders". Though we agree, the focus should not solely be on economic outcomes, and our approach in developing a framework to support repurposing includes a consideration of civic and social goods as beneficial outcomes, and a participatory approach to achieve a site appropriate PMLU.

A global scan of 141 repurposed mine and quarry sites undertaken by Holcombe and Keenan (2020) found that the most common category of repurposing was 'community and culture'. This category included: cultural/historical precincts, reclamation art, museums or exhibitions of mining/industrial history, and community event spaces. This category emerged 76 times in the sample of 141 cases.

An important element of this form of repurposing is reconfiguring mining infrastructure as cultural heritage. However, this form of repurposing was not usually led by industry and tended to relate to abandoned mines and/or historical sites. Though Holcombe and Keenan found exceptions to this, which were indsutry led.

The next most predominant repurposing practice Holcombe and Keenan found was “conservation and eco-system services”. This was followed by non-intensive recreation. Of note is the overlap between conservation and eco-system services and non-intensive recreation, which together make-up more than one-third of the total. The large scale and impressive commercially driven projects, such as the Kidston pumped hydro development (Qld) and the Woodlawn bio-energy eco-precinct (NSW) – though important—are not the norm. Of the 141 cases they accounted for 51 cases, or about one-third.

With this in mind, it makes sense to ensure that local and regional stakeholders and rightsholders are at the centre of any process when repurposing is a consideration, as it is often those stakeholders with local and regional knowledge, and thus those with most at stake, who may have considered the most appropriate and compelling repurposing scenarios. And it is most often not about replacing mining with another big singular industry, but rather with community infrastructure, including the ecosystem community.

However, **collaborative decision making is messy**. There are numerous barriers and challenges to repurposing, different considerations that need to be taken into account depending on the local context: if the mine is operating or abandoned, and at what stage the framework is picked up. Add to this, bringing in rightsholders and stakeholders to build consensus, which means that any process designed to support it can't be overly simplistic—it needs to reflect that complexity.

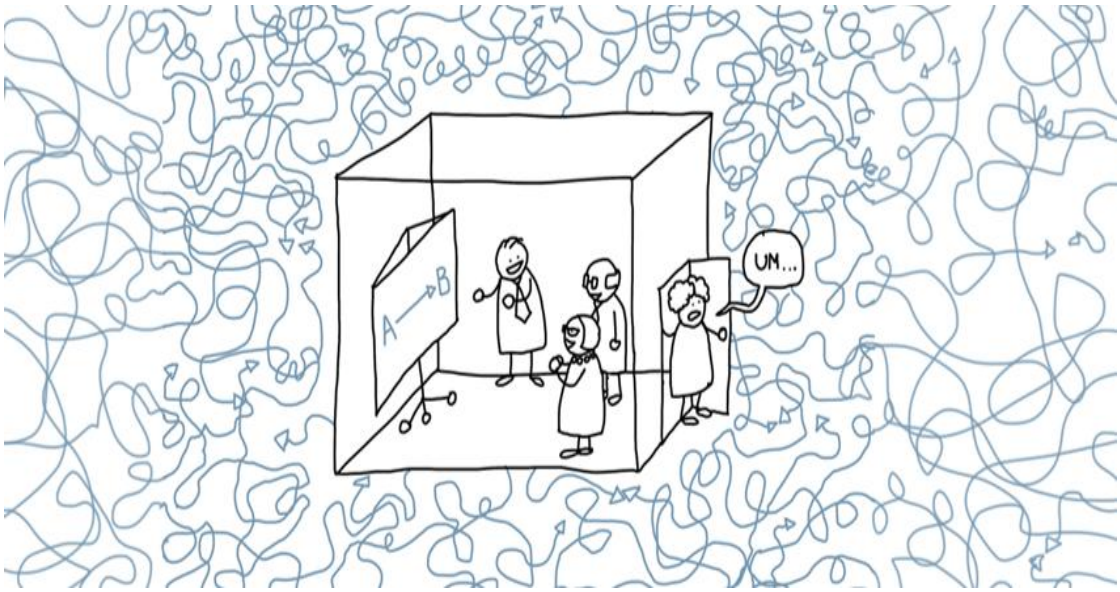


Figure 1 Collaborative decision making is messy (Business Illustrator) 1

What does this ‘messiness’ mean for the framework?

It means that it needs to be able to incorporate new knowledge along the way, and as such it is not entirely linear. Though there are some clear steps we move through in sequence, flexibility also had to be built in: the ability to loop back, to repeat steps, and to integrate new knowledge as it becomes available. As a result, the first step in developing this framework was to take a comprehensive look at the process as a whole.

The framework also seeks to support the **decision-making role of Indigenous rights and interest holders** in the process. Mine closure and repurposing can provide an opportunity to (re)engage with this local and regional constituency. In most cases it is unlikely that free prior and informed consent (FPIC), or indeed any

[1] Complexity and policy making - cartoon - Business Illustrator

form of informed consultation and participation (ICP) would have been sought, or provided, by this rights and interest holder group for the development of the mine. As a result, closure and the consideration of repurposing offers an important platform for a form of reconciliation and inclusion of this, often marginalised, group.

The project team worked to identify:

- the key elements that must be considered at some point, and
- the activities that will need to happen—whether they're sequential, parallel, or otherwise.

This gave us a strong foundation to build a process that could be applied by a range of stakeholders and rightsholders.

1.1.2 Glossary of terms

PMLU
Post-mining land use (PMLU) is the planned and approved future use of land following mine closure and rehabilitation, established through the relevant regulatory and mine closure approval processes. It represents the intended end-state that rehabilitation is required to achieve, such that the land is safe, stable, environmentally sustainable, and capable of supporting the agreed long-term use without causing unacceptable environmental harm (Department of Mines, Petroleum and Exploration, 2025, 2026; NSW Resources Regulator, n.d.; Queensland Government, 2018).

Repurposing
Repurposing is the way in which a mine site or mine site assets are adapted to an alternative use after operations have ceased (Hamblin et al., 2022). Repurposing utilises elements of the existing mining infrastructure (i.e. roads, mine housing, operational buildings) and/or the reconfigured aspects of the landscape (i.e. mine voids and mine features) for a different activity post closure. This activity may purposefully assist in transitioning the local economy. It may also mitigate the loss of the mine by building on and/or establishing new forms of attachment to the site and region (Keenan & Holcombe 2020).

Tenure
Tenure is the term that encompasses all grants of land from the Crown to a person or persons, and each type of tenure has its own rights and restrictions. In contrast, a right to resources is a grant of a licence to remove minerals that belong to the Crown, from the underlying land tenure. A licence to mine (a mining tenement) is a prevailing right that co-exists with the underlying land tenure. Tenure can also include unallocated crown land (reserves, etc.) (Brown, 2025).

Rightsholders and stakeholders
We have included the concept of 'rightsholder' as a particular category of actor within the framework, in addition to the stakeholder grouping. The stakeholder concept has functioned as a normative guide for natural resource management embracing three characteristics – including

1) inclusivity
2) prioritisation of economic interests, and
3) a historical view on rights which risks continued marginalisation of Indigenous people. (see Sarkki et al., 2021).

Our inclusion of the term rightsholder specifically seeks to elevate and centre Indigenous rights and interest holders, as well as recognising that there are other rights holder groups.

Developing decision-making methods that can accommodate this reconceptualisation of Indigenous actors in land use governance – in this case, PLMU repurposing is an important consideration for the project. In this process, we acknowledge that all citizens have rights, and we are not pitting one group against another.

Rather, we are taking an equity-based approach in tandem with acknowledging that Indigenous Australians have prior rights and interests which have been recognised through common law and statute. As of late 2024, positive native title determinations cover over 52% of Australia's landmass and waters. In the context of the Northern Territory (NT) – almost 85% is Aboriginal land (under the Aboriginal Land Rights Act (NT) 1976) or determined native title lands. These rights are also recognised through the almost 1500 Indigenous land use agreements (ILUAs) across Australia, plus more than 100 on Aboriginal land in the NT.

Those groups who have not had their native title rights recognised still have rights under the UN Declaration of the Rights of Indigenous Peoples (see article 26) – as endorsed by the Australian government. The project recognised these prior rights in conjunction with other rights holders. In our research advisory group we had two Indigenous participants, and at the project workshop (CRC TiME Forum) we had an Indigenous perspectives focussed table. This ensured an equity-based approach to decision-making frameworks developed by this project.

Rightsholder

Beyond the rights of Indigenous Australians and native title rights holders, we also recognise that there will be other rightsholders – notably those with property rights. So we have extended this definition as follows: A rightsholder is an individual, community, or entity that holds legally recognised rights or customary claims over mined land or its resources. These rights may include formal ownership, mineral rights, lease or concession rights, Native Title rights, or ancestral and cultural connections to the land — even where such rights are not formally recognised in statutory law.

Examples include:

- Indigenous traditional landowners recognised under land rights legislation
- Where native title or statutory land rights are not recognised, Indigenous peoples with ancestral, historical, cultural, or customary connections to the land, irrespective of formal legal recognition
- Private landowners
- Mining companies with lease or concession rights
- Others with lease rights e.g. pastoralists.

Stakeholder

A stakeholder is any individual, group, or organisation that has an interest in, or may be affected by, the repurposing of mined land, but does not hold a direct legal, inherent, or customary claim to the land itself.

Stakeholders may influence or be impacted by redevelopment decisions but do not possess rights that require formal recognition in the same way as rightsholders.
Examples include:

- Local residents
- NGOs
- Investors and developers
- Local businesses
- Workers and labour unions.

2 Methodology

This project drew on expertise across the Centre for Social Responsibility in Mining (CSRM), where five staff had distinct responsibilities for specific components – though we had regular team meetings and all came together to workshop this final report. This qualitative project was highly iterative as we drew on the

expertise of the project advisory committee and the final workshop at the CRC TiME Forum. The project methodology had three key components:

1) Extensive desktop review
The desktop review covered the relevant Australian and international literature on the following topics, including grey literature:

- Multistakeholder participation processes for land use decisions with a focus on the closure and repurposing of mine sites
- Regulatory frameworks for PMLU with a focus on Australia and what we can learn from international best practice
- Scenario planning and structured decision making specifically in the context of mine closure and PMLU cases
- Facilitation approaches for complex rightsholder and stakeholder engagements
- Effective and inclusive communication of complex information
- Case study examples of repurposing – both successful and unsuccessful – with a focus on governance and decision-making processes.

2) Advisory Committee
The project established an Advisory Committee of practitioners and researchers to provide strategic input and advice, ensuring that the research objectives and outputs aligned with the needs and priorities of multiple rightsholders and stakeholders, including Traditional Owners, industry, state and regional governments, and local communities. Interested experts and practitioners from CRC TiME partner organisations were also invited to participate. The Steering Committee was tasked to review and provide feedback on the project's Terms of Reference (TOR), the draft framework, and the revised framework. This group was important in socialising the project from the outset and also setting the tone for the workshop at the CRC TiME Darwin forum.

The advisory committee met three times over the course of the project (May, August and December 2025) with each workshop posing specific questions.

1. The first workshop focused on the participants aspirations for the project and what they would like to contribute. In the two break out sessions we then posed the questions of: "What is the ideal goal of repurposing? What are the barriers to repurposing? What would to need to happen to address the barriers?"
2. The second workshop presented the draft framework and sought feedback on whether the feedback and content would be useful, were the key elements there and what was missing?
3. The final workshop overviewed the Darwin workshop (August) outcomes and posed three questions: "Given the regulatory barriers how can we make the framework as useful as possible? Does this framework resonate for you wearing your stakeholder/rightsholder hat? And what can we do to make this framework useable for different stakeholders/rights holders?"

We recorded all of the workshop sessions and provided project summary updates for the second and third meetings along with reminder information packs.

3) Multistakeholder workshop CRC TiME Forum
With assistance from CRC TiME, we (Holcombe, Parmenter and Bourke) convened a consultation workshop with stakeholders and rightsholders during the CRC TiME Annual Forum. This was held in Darwin in August 2025, to gather feedback on the draft framework. The workshop was facilitated by Pam Bourke (professional facilitator) as part of the project team. A slide deck, a scenario and set of cards with phases and activities of the draft framework were prepared for participants to support the workshop.

The tables of stakeholder and rightsholder groups were as follows:

1. Mining companies
2. Indigenous individuals
3. Local government
4. State government
5. Community and Civil Society groups (two tables)
6. Landowners (pastoral, freehold)
7. Business interests.

Each table was assigned a scribe and the perspectives of each of the workshop tables was recorded on butchers' paper and in other cases the scribe sent us a summary of the workshop outcomes.

The table group work exercise was as follows:

- Each table had a rightsholder or stakeholder group to represent
- Each table had a set of cards and an outline of the draft framework with each card representing a step in the process we were exploring
- Each table had a copy of the scenario (see Appendix 6.1)
- The group were to place the cards on the butchers paper on their table in the order they believed the steps occur, building a visual representation of the process that would help their sector effectively contribute to planning for the scenario outlined
- They were to stick their cards on the butchers paper in a way that made sense
- They were encouraged to discuss, rearrange, repeat steps or add new steps if needed using the blank cards
- The goal was to co-create a shared understanding of the process flow and change/add to the elements as necessary
- On the paper they could write add any other comments/observations on how to make the framework useful and practical for their sector.

See Appendix 6.2 for the synthesis of the data from the workshop.

3 Literature review

3.1 Our approach

The focus of the following literature review is high level, where our focus is on drawing out key transferable lessons. As a desktop project, this review of grey literature and peer reviewed material has directly informed the framework, supplying the initial evidence base. This evidence was then augmented and further refined through engaging with the expertise of the advisory committee and the Darwin workshop.

We determined the relevant themes that we anticipated would provide the evidence base for the discrete activities of the framework, as follows:

- Multistakeholder participation processes for land use decisions with a focus on the closure and repurposing of mine sites
- Regulatory frameworks for PMLU with a focus on Australia and what we can learn from international best practice

- Scenario planning and structured decision making specifically in the context of mine closure and PMLU cases
- Facilitation approaches for complex rightsholder and stakeholder engagements
- Effective and inclusive communication of complex information
- Case study examples of repurposing – both successful and unsuccessful – with a focus on governance and decision-making processes.

3.2 Literature on international PMLUs: high-level review

These themes have provided the lens through which we have analysed the literature. The review began with global scholarship on post-mining regeneration and post-mining land uses (PMLUs) to identify documented approaches to multistakeholder participation. Global overviews of PMLUs and mine-site repurposing present a wide range of innovative and successful examples (Finucane & Tarnowy, 2019; Pagouni et al., 2024; Pearman, 2009; Whitbread-Abrutat & Lowe, 2024). However, while these works consistently highlight the importance of integrating the perspectives of relevant stakeholder groups in repurposing decisions, multistakeholder participation is rarely documented in sufficient procedural detail. Follow-up examination of selected cases revealed limited information about how engagement processes were designed, structured, or implemented in practice.

The body of academic literature on PMLUs and mine-site repurposing now provides extensive insights into the technical, economic, environmental, and regulatory dimensions of land transitions. Within this literature, the predominant focus remains on feasibility assessments, risk management, regulatory compliance, closure planning, and the effectiveness of rehabilitation. Far less attention is given to how rightsholders—particularly Indigenous Peoples and First Nations—and other stakeholders influence repurposing outcomes, or how these processes are governed and supported through decision frameworks capable of accommodating conflicting values, uncertainty, and long timeframes. There is a smaller but expanding segment of research on multistakeholder engagement dimension of PMLUs and repurposing, particularly focusing on Australian mining regions.

3.3 Australian literature on PMLUs: multistakeholder participation

There are five specific case study examples - in central Qld, NSW, Kimberley region, La Trobe Valley and Port Kembla - that we have drawn from and that have directly informed the framework. As a result, we include these here in some detail.

3.3.1 Bowen Basin (Qld)

The first, and earliest, was a pilot exercise in the form of a workshop-based stakeholder panel model using hypothetical post-mine land-use exercises tested in the Bowen Basin, central Queensland, (Akbar et al., 2021; Rolfe et al., 2018). The research team convened a series of four deliberative workshops, bringing together graziers, environmental groups, Traditional Owners, mining representatives, agricultural organisations, and local government. Using an illustrated, hypothetical mine site (with pits, mine waste areas, underground workings, unmined buffers, and tailings dams), participants were asked to map preferred land uses and identify what each domain would require to become safe and productive. Individual exercises in the early workshops revealed diverse insights, which were captured visually through layered maps and domain-by-domain assessments. The workshops then shifted toward group deliberation. Mixed-sector groups negotiated land-use plans, revealing both convergence and divergence. While individual

preferences varied widely, aggregated results showed surprisingly limited differences between stakeholder sectors. This finding suggested that structured dialogue could move groups toward shared positions. While full multistakeholder consensus may not be achievable, positions that maximise areas of general agreement are possible.

The study highlighted the importance of identifying risks, as well as ensuring access to expert opinion on relevant matters in multistakeholder processes. It demonstrates how maps and visual aids can serve as both a stimulus and a foundation for discussion and negotiation, and as a means of illustrating the extent to which consensus has been reached or where differences remain.

3.3.2 Hunter Valley (NSW)

The second was a multistakeholder visioning exercise tested in the Hunter Valley (New South Wales), a major coal-producing region in Australia. The community organisation Hunter Renewal led a community-driven process to develop a vision for post-mining transition, including land-use priorities (Crofts & Phelan, 2025; Hunter Renewal, 2023). The project team reviewed more than one hundred technical and planning documents related to mine closure and land rehabilitation. Drawing on the previous five years of Hunter Renewal's community engagement and the literature, the team identified six dimensions of PMLU needed to support successful post-mining land use: climate and environment; regional planning and governance; First Nations; community; mine rehabilitation; and economics. As background, this project detailed the regulatory and policy complexity, as well as planning, development, and zoning processes.

A panel of ecological, social, and technical experts from the University of Newcastle advised on the draft framework, alongside Wanaruah/Wonnarua Elders and other First Nations representatives. The Expert Panel comprised one Indigenous representative and eight discipline experts across ecological, social, and technical fields. Working in iterative rounds (Delphi-style), panel members reviewed draft land-use principles, identified missing considerations, and refined the language to ensure the principles were realistic and implementable.

Hunter community members then reviewed and revised a second draft through a series of focus group discussions, individual conversations with First Nations people, and an online survey. Participants in the focus group conversations were presented with the revised principles and recommendations and were invited to respond without restriction. In the second part of this phase, the amended text was made widely available online through a survey distributed to community members. Throughout this stage, the project team ensured that amendments reflected the deliberations expressed in focus groups and survey responses. Revisions during this phase were as varied as those in the Delphi stage, with a strong emphasis on improving accessibility and clarity of language. In the fourth and final phase, the project team consolidated the PMLU principles and recommendations into the Blueprint, a publicly available report (Hunter Renewal 2023). The dimensions of PMLU were updated as (1) Rehabilitation and Landscape Restoration; (2) Regional Planning and Governance; (3) Community; (4) First Nations; and (5) Climate and Environment. The Blueprint was designed to be accessible to a diverse readership, including Hunter Valley community members who had contributed to the process.

3.3.3 Latrobe Valley (Victoria)

The final was the Latrobe Collaborative Planning (LCP) research project, supported by CRC TiME and partners, aimed to develop a shared vision for the future use of mined land in Victoria's Latrobe Valley. It sought to design and test a multistakeholder deliberative mechanism for identifying preferred post-coal development options, addressing a recognised policy gap.

The first phase used participatory multi-criteria analysis (MCA) to assess alternative futures. The project team developed three qualitative, contrasting scenarios for the Latrobe Valley in 2050, based on regional plans and expert interviews in the fields of planning, agriculture, energy, and biodiversity. Each scenario was

translated into a quantitative post-mining land-use mix. Land-use types were defined by (a) predominant activities or outputs and (b) associated valued outcomes. In workshops, participants allocated 100 points across evaluation criteria to reflect their values before receiving details of scenario performance. The report notes challenges of abstraction and scale. Quantified PMLU scenarios were presented in abstract form, without site visits or interactive visual materials. Although maps were available, they were not integrated into exploratory activities. It recommends more experiential site engagement and assessment at a precinct scale. The report further concludes that participatory MCA is better suited to structured deliberation among organised stakeholders with regional knowledge. While effective for comparison, MCA was limited in supporting open-ended value exploration; participants required space for dialogue before translating preferences into criteria and weights.

The second phase adopted a more explicitly deliberative approach to articulating a regional vision. Engagement occurred through three streams: a Youth Summit, an Indigenous Reference Group, and a Community Panel. The Community Panel met for five three-hour evening sessions to consider: 'Which future post-mining land uses contribute to your values and aspirations for the Latrobe Valley, and why'? 'How should landowners evaluate future development proposals?' In the Community Panel (29 participants), members allocated 100 points across 13 value categories. They received written summaries, visual materials, expert input, and participated in imaginative mapping. Land-use preferences were indicative rather than spatially explicit. The Panel also developed 10 planning principles to guide evaluation of future proposals.

Methods varied across cohorts. The Youth Summit applied design thinking, with students working in value-based groups, creating "mud maps," and using Minecraft to test ideas. Teachers reported sustained engagement beyond the sessions. The Indigenous Reference Group met on Country, combining site walks, discussion, and visual facilitation. The process respected cultural protocols, avoided premature spatial specification, and created space to discuss healing Country and obligations to community.

3.3.4 The Argyle Closure Work Plan Framework (WA)

The closure of the Argyle diamond mine marked an unprecedented moment in Australia: it was the first large-scale mine to move toward relinquishment under a formal arrangement in which Traditional Owners (TOs) held a central, decision-shaping role (Reeves et al. 2025). When mining ended in 2020, TOs made clear that earlier closure planning had often excluded their values, lacked transparency, and failed to address cultural priorities. In response, Gelganyem—the TO representative body—designed a new approach: the Closure Work Plan (CWP), a structured, staged, and culturally grounded engagement framework to guide closure planning, technical review, and co-design of the Mine Closure Plan. The CWP functioned as both a process and a governance model, designed to ensure that closure outcomes reflected TO aspirations, technical integrity, and the principles of free, prior and informed consent (FPIC).

The framework emerged after several years of tension, information gaps, and fragmented consultation. Early surveys distributed across all seven Miriwoong and Gija estate groups revealed that many TOs did not understand the closure process, were uncertain about technical risks, and felt unable to participate meaningfully. Gelganyem responded by developing simple visual tools—a readiness and awareness survey and a comprehensive issues log—to gather concerns and identify misalignments. These tools uncovered significant concerns about water systems, landforms, contamination, biodiversity, and cultural heritage protection. They also revealed structural barriers, including missing data, inaccessible reports, and inconsistent communication from the company. To address these issues, Gelganyem established a Request for Information (RFI) Register, a transparent, TO-led system for tracking, requesting, and receiving technical documents. The register also facilitated the repatriation of historical records to the community. These early steps laid the foundation for a more equitable and informed engagement process.

Building on this groundwork, Gelganyem established the Technical Working Group (TWG), a formal, multi-party forum where TOs, Rio Tinto staff, Gelganyem representatives, and independent specialists met

regularly. The TWG ensured equal participation, reviewed the issues log, coordinated technical work, and enabled TOs to question experts directly, without corporate filtering. The TWG provided the structure and insight necessary to develop the fully articulated CWP—a sequential, multi-stage framework guiding closure planning from vision through to monitoring.

At its core, the CWP proceeded through seven stages, each designed to ensure TO leadership, transparency, and informed decision-making. It began with establishing a closure vision, in which TOs articulated their values, defined long-term aspirations, confirmed post-mining land uses, and undertook cultural land-use mapping. This stage anchored closure planning in cultural meaning and Country-based priorities rather than technical constraints alone (see also Dowell & Holcombe, 2025). Gelganyem then coordinated independent assessments of key risks, using the company's own risk framework to evaluate inherent and residual risks across water, landforms, rehabilitation, contamination, infrastructure, and cultural heritage. These risk assessments guided the commissioning of independent technical reviews, in which subject-matter experts—including hydrologists, geochemists, ecologists, and geomorphologists—analysed each domain in depth. The reviews were iterative and grounded in expert-to-expert and expert-to-TO dialogue, supported by information obtained through the RFI process. Findings from each technical review informed a systematic examination of completion criteria, testing whether proposed criteria aligned with the closure vision and identifying gaps or unrealistic expectations.

The CWP then moved into a closure strategy review phase, where recommendations from technical assessments and TO perspectives were integrated to refine or challenge elements of the proposed closure strategy. This stage marked a critical point at which TOs exerted influence over options analysis. The final stages translated negotiated outcomes into amendments to the Mine Closure Plan, followed by the development of monitoring and maintenance plans and a commitment to ongoing evaluation. Gelganyem requested independent audits every three years to ensure that progress remained aligned with agreed outcomes.

A defining feature of the CWP was its commitment to dialogue and experiential learning. Each major technical domain included information sessions in which experts presented preliminary findings directly to TO leaders and responded to questions, enabling two-way learning and refinement. These sessions were supplemented by site visits, during which TOs and experts walked the land together—testing water, inspecting rehabilitation plots, assessing landforms, and discussing risks in situ.

3.3.5 The Mt Kembla Mine Memorial Pathway project (NSW)

As reported by Larance (2012), the Mt Kembla Mine Memorial Pathway project in NSW demonstrates a collaborative and community-centred framework for planning mine rehabilitation and final land use. Illawarra Coal and its design partners adopted a process built on early engagement, iterative dialogue, and shared ownership of outcomes.

The process began with a strong commitment to early and sustained stakeholder engagement. Illawarra Coal established the Mt Kembla Mine Memorial Pathway Group—a representative community committee that served as a constant reference point throughout design and planning. From the earliest scoping stage, the company sought community input on heritage interpretation, recreational uses, access, vegetation, and residential development possibilities. On-site meetings allowed residents to review design concepts in situ, walk the land with planners, and provide direct feedback on pathway placement, materials, subdivision layout, and ecological improvements.

The project followed a participatory master-planning approach in which community proposals, written submissions, and verbal feedback were incorporated into the evolving concept plan. Technical studies—including ecology, geotechnical analysis, bushfire assessment, hydrology, and contamination investigations—

were layered with community-identified opportunities and concerns. A shared planning table mapped opportunities (e.g., connectivity and recreational areas), community values (heritage, aesthetics, biodiversity), and concerns (vegetation management, subdivision scale, creek stabilisation methods). Once a preferred master plan emerged, a coordinated engagement process was undertaken with state and local authorities in New South Wales.

The follow-up phase included co-managed rehabilitation design, in which technical specialists and community members worked together to select materials, stabilise creek banks, shape landforms, and choose revegetation species. Community involvement continued into construction and maintenance, with resident volunteers participating in revegetation and ongoing stewardship activities.

3.4 International literature on transitions in coal regions

A second body of literature central to this review concerns global coal phase-out transitions, particularly experiences in European coal regions. Among the few documents proposing overarching repurposing frameworks is the World Bank report 'Repurposing Coal Mining Lands for a Just Transition: Methods, Financing, and Governance Solutions' (World Bank, 2024). This report outlines a structured repurposing framework beginning with site visits, stocktaking, and dialogue with key stakeholders—including owners, operators, regulators, communities, business associations, academia, and civil society. It then proposes developing criteria to assess post-transition potential, grounded in international practice and future trends. Core categories include (i) location and redevelopment potential; (ii) environmental and geotechnical risks and liabilities; (iii) topography and hydrography; and (iv) development potential, added value, and financial risks.

The World Bank illustrates this framework through three cases: Harworth Group PLC (UK), the RAG Foundation (Germany), and the Tennessee Valley Authority (USA). The Harworth site employs iterative spatial master-planning workshops and public consultations to clarify community priorities regarding housing, mobility, heritage, and employment. The RAG Foundation, by contrast, focuses on financing Germany's "perpetual obligations" from hard coal mining; its engagement is primarily intergovernmental and inter-organisational, centred on liability allocation and long-term water management rather than community-led participation. The Tennessee Valley Authority, as a federally owned utility, conducts formalised public consultations to guide the productive reuse of retired coal assets.

These three comparative cases underscore that repurposing outcomes are strongly conditioned by whether governments and site custodians can provide clarity around residual liabilities (see section on regulatory frameworks). The World Bank report highlights that engaging community members early and consistently, and securing community buy-in to repurposing projects, is essential—regardless of whether the process is managed jointly by local government and the company or utility, or independently. A related World Bank publication advocates a proactive "mining for repurposing" approach (World Bank, 2024), encouraging operators to go beyond closure compliance toward preparing land for optimal future productive uses. This perspective shifts repurposing from a reactive, post-closure activity to a strategic objective embedded during mine operations.

European Union initiatives for coal regions in transition have produced several guidance documents, including the Decision Support Toolkit on Post-Mining Landscape Management (TRACER, 2022), the Toolkit: Managing Post-Coal Assets through Spatial and Strategic Planning (European Commission, 2024), and the Toolkit: Environmental Rehabilitation and Repurposing (European Commission, 2025), alongside applied case studies (Baker et al., 2021). These documents conceptualise mine-site repurposing as a governance-centred, spatially integrated transition process linking environmental stabilisation, territorial planning, and economic diversification.

A notable contribution within this European literature is the Transformation Options Framework (TOF) (Initiative for Coal Regions in Transition, 2022). The TOF outlines six interrelated components: (1) partnership building; (2) baseline assessment; (3) vision setting; (4) options scanning; (5) multi-criteria assessment; and (6) project preparation. Stakeholder engagement is embedded throughout, and the framework explicitly recognises the importance of site-owner support. While sequential in structure, the TOF allows flexibility for parallel implementation depending on local capacity and context.

The reviewed frameworks converge around a structured sequence of components, as follows:

- First, territorial diagnosis is treated as foundational. The spatial planning toolkit highlights the need for systematic data gathering, stakeholder mapping, and analysis of policy alignment prior to option development. Similarly, the revitalisation literature stresses the importance of understanding socio-economic conditions, institutional capacity, and regulatory context before formulating redevelopment pathways. Repurposing potential is thus understood as territorially contingent, shaped by site characteristics, regional economic structure, demographic trends, and planning frameworks.
- Second, strategic vision-setting emerges as a critical phase. Effective cases articulate long-term territorial visions aligned with regional development strategies and just transition objectives. Mixed land-use approaches are frequently presented as robust solutions capable of balancing economic regeneration, environmental restoration, and social infrastructure. Vision-setting provides the normative and strategic anchor for subsequent spatial planning and investment mobilisation.
- Third, governance architecture is treated as decisive. The Environmental Rehabilitation and Repurposing toolkit underscores the need for institutional coordination, regulatory clarity, and clearly defined responsibilities among mining companies, regulators, and local authorities.

3.5 Multistakeholder participation processes

As discussed, the literature in relation to multistakeholder participation in PMLU planning and repurposing has taken varied forms, ranging from consultation on predefined options to structured multi-stage deliberative processes that shape visions, criteria, and governance arrangements.

Using the IAP2 Spectrum as a reference point (Table 1), the documented cases indicate that the intention and scope of multistakeholder participation are often limited to the “inform” and “consult” levels (Beer et al., 2022; Whitbread-Abrutat & Lowe, 2024; World Bank, 2024). These levels of engagement are typically implemented through public consultation processes undertaken either to satisfy permitting and planning requirements or to strengthen the business case for securing community support (Everingham et al., 2018; Luyet et al., 2012; Svobodova et al., 2026). However, this predominantly proponent-led consultative model rarely creates conditions conducive to shared decision-making among post-mining rightsholders and broader stakeholders (Boggs et al., 2023). While “inform” and “consult” remain important components of participatory practice—and are often embedded within higher levels of engagement such as “involve,” “collaborate,” and “empower” (Luyet et al., 2012)—their influence on substantive decision-making remains limited.

By contrast, more community-centred or collaborative repurposing initiatives (discussed earlier), such as the Latrobe Collaborative Planning (LCP) research project and the multistakeholder visioning process undertaken by the Hunter Renewal project, deliberately sequenced different forms of engagement across planning stages (Crofts & Phelan, 2025; Foran & Reeves, 2026). As a result, they moved beyond consultation toward co-production of vision, criteria, and governance arrangements.

Table 1 The IAP2 Spectrum in the repurposing context

Levels of participation	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
Commitment to stakeholders	"We will keep you informed in accessible and timely ways."	"We will listen, gather your views, and report back on how your input influenced the process."	"Your views will directly shape the options under consideration."	"We will work together to incorporate your advice in each aspect of the plan."	"We will implement the decision you make."
Application in repurposing context	To provide timely information in clear, easily understood language and in formats suitable for both digital and in-person engagement. Proponents can use fact sheets, websites, newsletters, social media updates, and open houses. Visual tools such as maps, images, videos, VR, and diagrams help convey landscape features and repurposing options in an accessible and engaging way.	To gather ideas and feedback on repurposing options whether as part of a broader statutory planning process or a stand-alone initiative. Proponents can use a mix of methods, including public comment periods, surveys, focus groups, and public meetings. .	To work with rightsholders and key stakeholders to develop visions and assessing feasible repurposing options and scenarios. Proponents can use site visits, multi-round workshops, focus groups, advisory panels, and online interactive tools that support ongoing input and collaborative evaluation.	To partner with rightsholders and stakeholders in co-developing a repurposing vision, options, criteria and plans that reflects their aspirations while remaining technically and financially feasible. Proponents can use multistakeholder committees or reference groups, consensus-building deliberative workshops, and participator decision support tools. Capacity building—particularly for Indigenous governance and local community groups—is essential.	To grant a community or stakeholder-led entity final authority to approve or reject a proposed repurposing project, decision-making power can be delegated through mechanisms such as referendums, citizen juries with formal authority, or governance arrangements that vest final approval rights in Indigenous decision-making bodies.

Note: Authors' application of the IAP2 Spectrum of Public Participation to mine repurposing, adapted from International Association for Public Participation (IAP2, 2018).

Consistent with broader multistakeholder engagement processes in mine closure (ICMM, 2025), collaborative and empowering forms of participation in repurposing require dedicated governance arrangements and clearly articulated process frameworks. Without such institutional and procedural architecture, participation risks remaining merely consultative. Worden et al. (2024) proposed one of the few structured frameworks designed to embed multistakeholder collaboration into Australian regional PMLU planning. They outlined four key steps, which include:

1. assessing collaborative potential
2. establishing clear terms of reference by constituting a multistakeholder group
3. adhering to nine core principles of collaboration to build legitimacy and cohesion, and
4. collectively assessing PMLU suitability.

A similar approach is reflected in the Initiative for Coal Regions in **Transition's Transformation Options Framework (TOF).** Drawing on European coal transition experience, the TOF identifies six interrelated components for rehabilitating and repurposing brownfield sites in an inclusive, structured, and transparent manner:

1. partnership building
2. baseline assessment
3. vision setting
4. options scanning
5. multi-criteria assessment, and
6. project preparation.

Stakeholder engagement is embedded across all stages, and the framework explicitly recognises the importance of site-owner commitment and institutional alignment in enabling implementation (CRiT, 2025).

Multistakeholder approaches have been applied across a range of mine closure and PMLU contexts, including the land management plan developed by Luscar and Gregg River Mines' Land Management Plan Working Group in Canada (Karmacharya et al., 2011), the Traditional Owners' vision for the future of Nhulunbuy and the Gove Peninsula (Boggs et al., 2023), the Argyle Closure Work Plan Framework led by the Technical Working Group (Reeves et al., 2025), and visioning initiatives in the Latrobe Valley (Foran & Reeves, 2026).

A crucial point along the continuum of multistakeholder participation in repurposing concerns the sequencing of vision setting. When articulated early and through inclusive processes, shared visions define the boundaries of acceptable options or scenarios, thereby reducing the risk that repurposing pathways are predominantly determined by experts and technical assessments alone.

Where prior feasibility or suitability assessments exist, these can inform and enrich vision-setting processes, which in turn guide more focused option scanning and subsequent evaluation. Stronger participation models therefore progress from developing a shared understanding of constraints and opportunities, to early articulation of values, to scenario or option exploration, and then to structured assessment. The technical complexity of repurposing requires multidisciplinary expertise and analysis, which can form the basis of discussions with stakeholders (Akbar et al., 2021; Reeves et al., 2025; Worden et al., 2024), allow iteration as knowledge evolves, and generate outputs that meaningfully inform multistakeholder decision-making. Consensus in these processes does not necessarily imply unanimity. Rather, it may involve agreement on overarching visions, shared principles, uncertainties and risks, and preferred scenarios and options.

3.6 Barriers to repurposing

We recognise that repurposing is a relatively new process, and in most states and territories regulation is yet to catch up with alternative land uses. This section outlines the key barriers to repurposing mines and mining infrastructure that were identified from a review of academic and grey literature. Five barriers are discussed: regulation, liabilities, relinquishment and residual risk, zoning restrictions and public access to data needed for repurposing decision-making.

1) Repurposing regulation

There is agreement across the literature reviewed that existing regulations in Australia are inadequate for addressing repurposing activities. Gardner and Hamblin (2021), for example, note the lack of clearly established regulatory measures governing repurposing of mine assets into non-mining uses while Fogarty (2022) reports a lack of oversight at regional scale, including how rehabilitated mined land interacts with future land use needs. This lack of integrated planning mechanisms is highlighted by the Institute for Regional Futures at the University of Newcastle. In its submission to the 2025 New South Wales Parliamentary enquiry into beneficial and productive post-mining land uses, the institute says there is a lack of statutory requirements for the integration of land use planning during the mining lifecycle with broader government land use planning (Institute for Regional Futures in Parliament of NSW, 2025).

Authors also discuss the challenges mines face in responding to changing societal expectations around the reuse of mined land and infrastructure (Bowden et al., 2025). Government approval is required to change the PMLUs stipulated in approvals documents (NSW Government in Parliament of New South Wales, 2025). The cost and operational difficulty of revising environmental approvals means that PMLUs are rarely changed (Fogarty, 2022). The reuse of mine infrastructure is also challenging under existing regulatory regimes. In many cases it is a requirement that the infrastructure be removed (Fogarty, 2022) rather than be repurposed by the next land users.

2) Liabilities

It is not a straightforward endeavour to introduce non-mining activities onto a mining lease. In its evidence to the parliamentary enquiry into beneficial and productive post-mining land uses, the NSW Minerals Council said a mine operator would be required to hold the mining lease and would remain liable for the site while works were carried out by third parties. In addition, the operator would need to maintain the security deposit for the lease, which would be subject to a different set of risks (NSW Minerals Council in Parliament of New South Wales, 2025). As identified by Purtill et al. (2026, p. 5): “Working out how to apportion the

relative responsibility for liabilities, both those existing and those potentially introduced by the new activity, may pose a barrier [to repurposing activities]".

Aspiring repurposing proponents are also faced with challenges in relation to managing liabilities, three of which are highlighted here. First, non-mining proponents and contractors need to abide by the workplace health and safety standards of a mining lease, which they may find onerous to meet (NSW Mining Council in Parliament of New South Wales, 2025). Second, they would need to invest in developing their repurposing initiatives without certainty that the tenement would be relinquished (NSW Mining Council in Parliament of New South Wales, 2025). Third, the mine's rehabilitation would have been designed and implemented to meet the PMLUs stipulated in project approvals and may not be suitable for the proposed repurposing initiatives (Fogarty, 2022; NSW Resources Regulator, 2021, in Purtill et al., 2026).

3) Relinquishment and residual risk

The reluctance of mine operators to relinquish mine tenures and the paucity of cases of relinquishment in Australia (and globally) are topics that have generated significant attention in the literature (see, for example, Institute for Regional Futures in Parliament of New South Wales, 2025; Measham et al., 2024; Tiemann et al., 2019). In some jurisdictions, such as NSW partial relinquishment is the most common form of rehabilitation signoff (Parliament of NSW, 2025). Cooper (2024) claims there is a lack of tangible incentives for mine operators to relinquish their leases and that this issue delays the availability of land for repurposing. EnviroMETS (2023) concurs, stating that the uncertain timing can be a disincentive for attracting investment for the next land use.

Reluctance to relinquish is commonly attributed to the issue of residual risk. The Queensland Government (2018, p. 5) defines residual risk as: "those risks remaining at a rehabilitated resource site once surrender of the environmental authority occurs". Tiemann et al. (2022, p. 3) describe residual risk as a "major impediment" to relinquishment. This view is reiterated by Boggs et al. (2025) who report that concerns about residual risk affect progressive rehabilitation and early transition of land to its next use. Mine operators are reluctant to risk future costs being incurred even after a mine has been successfully surrendered. Maybee et al. (2024) explain that future costs could relate to geotechnical stability monitoring, the failure of completed closure work to perform as expected, or unforeseen impacts (Maybee et al., 2024). The regulator can also require the mining leaseholder to address land management actions for the next land user, which result in additional costs and time delays – see for example, the rehabilitation of Yancoal's Rhondda Colliery and development of the Blackrock Motor Sport Park (Cooper, 2024; NSW Resources Regulator, 2024).

4) Zoning restrictions

Land use zoning influences the options available for repurposing. If the zoning isn't suitable for the repurposed use, the area needs to be rezoned, which can be a lengthy and expensive process. Zoning was a topic discussed by numerous witnesses at the enquiry into beneficial and productive post-mining land uses. Amanda Wetzel from the Institute for Regional Futures discussed the challenges of aligning land use zoning plans with land use aspirations (Parliament of New South Wales, 2025). Martin Rush from the Association of Mining and Energy Related Councils discussed the challenges of seeking to rezone the Liddell Power Station site in Muswellbrook Shire following the closure of the power station. The site has been undergoing rezoning for more than eight years, with potential investors walking away due to zoning issues (Parliament of New South Wales, 2025). Tom Loomes from the Department of Planning, Housing and Infrastructure acknowledged the challenge of identifying future land uses through the zoning of mines at an early stage and that there was a need for more flexible zoning arrangements (Parliament of New South Wales, 2025).

5) Lack of publicly accessible data

There is limited, publicly accessible data available for use in planning mine repurposing. Cooper (2024) notes an absence of aggregated regional data needed to inform decision-making and few mechanisms for retaining closure knowledge needed to guide the management of the next land uses. This barrier is acknowledged by the Institute for Regional Futures, which contends that the lack of available data on the status of rehabilitation and mine design restricts the evidence needed for long-term planning (Parliament of New South Wales, 2025). EnviroMETS (2023) reports a similar situation in Queensland, where it says there is no way to determine how a PMLU option fits into the strategic direction of a region or geographic zone. In NSW, mine operators are required to conduct a formal assessment of PMLU options. Fogarty (2022) finds little evidence that assessment information is made publicly available and that guidance on how to analyse options is lacking.

3.7 Visions and scenarios

In repurposing contexts characterised by long time horizons, technical uncertainty, and contested values, it is important to clarify distinct but complementary roles of visions and scenarios. A vision is a normative construct. It articulates shared values, guiding principles, and desired long-term outcomes, thereby defining what constitutes success and establishing the ethical boundaries of acceptable trade-offs (Gregory et al., 2012; Keeney, 1996).

Visioning therefore begins with the elicitation of guiding principles and collective objectives before technical comparison or option narrowing occurs. Rather than starting from predefined land uses or engineering constraints, it foregrounds aspirations, responsibilities, and cultural meaning. At Argyle, for instance, Traditional Owners defined the closure vision and established governance mechanisms to ensure that environmental and engineering studies aligned with that vision (Reeves et al., 2025). European revitalisation approaches in former mining regions and brownfields likewise emphasise early articulation of shared direction to anchor coordinated transition and repurposing planning.

Visioning can function not only as an exercise in clarifying preferences but also as a process for creating the conditions for dialogue across different ways of knowing and relating to land. For example, Indigenous-centred end-land-use planning models position the closure vision as a living agreement guiding decisions across the life of mine (Melaschenko et al., 2024). Similarly, “co-visioning” approaches emphasise the importance of allowing Indigenous and non-Indigenous futures to be expressed without being prematurely translated into a single technical framing (Daly et al., 2022). This underscores the need for culturally appropriate methods, sufficient time, and place-based discussion before moving to criteria, metrics, or scenario comparison.

Scenarios, by contrast, are analytical constructs used to explore multiple plausible futures under varying economic, environmental, and institutional conditions. By deliberately surfacing key uncertainties and challenging prevailing assumptions, scenario planning generates contrasting narratives or visual representations that illuminate alternative possible futures (Sharpe et al., 2016). Scenarios answer: What could happen under different conditions? How might external uncertainties shape outcomes? What risks and opportunities emerge under each pathway?

In technically bounded contexts—where hydrology, contamination, land capability, or infrastructure constraints strongly shape feasibility—scenario development may follow initial option identification. The Bowen Basin workshops illustrate this approach (Akbar et al., 2021; Rolfe et al., 2018). Participants mapped preferred land uses onto a model post-mining landscape, identifying viable grazing areas, exclusion zones, and rehabilitation domains. A shared direction emerged inductively through iterative negotiation rather than through a formal upfront vision statement.

The Hunter Renewal initiative represents a hybrid model of community-led visioning combined with structured scenario analysis (Hunter Renewal, 2023). In 2022, the initiative commissioned scenario modelling

by Ernst & Young examining 130,000 hectares of mined and mine-owned buffer lands. The analysis indicated that expanded biodiversity restoration and agricultural investment, combined with targeted clean industrial development on heavily impacted sites, could generate substantially greater economic output and employment than conventional rehabilitation trajectories (Ernst & Young, 2022). Importantly, scenario analysis was embedded within a principle-based, community-defined vision centred on environmental restoration, regional employment, and intergenerational wellbeing (Crofts & Phelan, 2025).

3.8 Facilitation approaches for complex rightsholder and stakeholder engagement

The literature on participatory decision-support systems demonstrates that contemporary environmental governance increasingly depends on structured processes capable of integrating social, ecological, and economic dimensions while meaningfully involving affected parties (Gregory et al., 2012; Luyet et al., 2012; Marttunen et al., 2015). In complex repurposing contexts characterised by technical uncertainty, competing land uses, cultural difference, and uneven power dynamics, skilled facilitation is essential (CSIRO, 2023). The approaches used and the capacity to provide enabling facilitation can shape the dynamics of collaboration and the outcomes of multistakeholder processes. The literature highlights several interrelated facilitation approaches suited to complex rights-holder and stakeholder participation in repurposing contexts.

3.8.1 Understanding values first

The literature on structured decision systems emphasises that value elicitation and objective clarification should precede option comparison (Keeney, 1996; Gregory et al., 2012). A values-first approach reframes deliberation from “which option is best?” to “what matters most?” Methods such as guiding-principles workshops, objectives hierarchies, and narrative articulation of desired futures allow stakeholders to clarify shared and divergent priorities before scenarios or options are debated. In repurposing contexts, this sequencing ensures that land-use configurations, rehabilitation standards, and diversification pathways are anchored in collectively defined aspirations (Everingham et al., 2020; Foran & Reeves, 2026).

3.8.2 Analytic–deliberative integration

Repurposing decisions inevitably involve complex technical considerations such as hydrology, contamination risk, biodiversity recovery, and economic modelling. Technical expertise is therefore essential. However, legitimacy depends not only on analytical rigour but on how expertise is introduced and discussed (Burgess et al., 2007; Dunlop et al., 2024; Everingham et al., 2018). The literature emphasises joint fact-finding, transparency of assumptions, and iterative refinement of technical inputs through dialogue. Participatory decision-support tools such as participatory Multi-Criteria Analysis (MCA) or Multi-Criteria Evaluation provide structured frameworks for comparing options that can be tailored to specific contexts and stakeholder needs. While these approaches incorporate participation to varying degrees, they generally require expert support and facilitation. Although decision-support tools can generate sophisticated outputs, within deliberative processes they are treated as inputs to collective reasoning, enhancing transparency, credibility, and legitimacy (Niemeyer, 2005). An important consideration is that complex tools such as MCA demand significant technical capacity and resources (Dean, 2022). Therefore, it is advisable to assess the requirements for applying MCA and to identify available resources and potential constraints at an early stage of the process (Marttunen et al., 2015; Proctor & Drechsler, 2006).

3.8.3 Cultural embeddedness

Where Indigenous rights and cultural values are implicated, engagement must move beyond stakeholder inclusion toward recognition of rightsholder authority (Barnes et al., 2025; Kemp et al., 2023). Mine closure scholarship increasingly emphasises co-visioning, culturally defined closure criteria, and place-based dialogue grounded in relational worldviews (Bond & Kelly, 2021; Brady et al., 2021; Daly et al., 2022). Facilitation methods such as on-Country workshops, yarning circles, and narrative mapping enable the articulation of distinct ontologies and relationships to land (Annandale et al., 2021; Foran & Reeves, 2026; Reeves et al., 2025).

The key messages that emerged from the Indigenous table participating at the CRC Forum for this project were as follows:

- start with Country: understand native title and cultural boundaries, including gendered and heritage aspects
- acknowledge history: planning must recognise the impacts of colonisation, trauma, and diverse forms of connection to Country
- centre Indigenous knowledge: include spiritual, cultural, environmental, and customary knowledge in all planning—both traditional uses and contemporary innovation
- recognise layered authority: engagement must account for different roles—native title holders, cultural knowledge holders, and local authorities
- build real relationships: trust takes time—engagement must follow Indigenous timelines and protocols, not project deadlines
- support kinship-based decision making: respect relational governance structures follow FPIC (Free, Prior and Informed Consent) principles
- prioritise clear, respectful governance: engage through transparent, honest, and culturally appropriate decision-making—"boss to boss"
- value more than money: genuine engagement is not transactional; relationships must be nurtured and honoured
- challenge systemic bias: recognise and correct assumptions that non-Indigenous tenure (e.g. pre-existing grants prior to the native title act) overrides traditional rights.

(see also Appendix 6.2).

3.9 Effective and inclusive communication of complex information

PMLU and repurposing require stakeholders to engage with highly technical and often uncertain information, including geochemistry, hydrology, contamination risks, landform stability, biodiversity trajectories, financial liabilities, and regulatory completion criteria (ICMM, 2025; World Bank, 2024a; Unger et al., 2025). How this information is presented—its format, timing, framing, and governance—can strongly influence trust, legitimacy, and the ability of rightsholders to exercise meaningful influence (Rosenthal et al., 2015).

Both academic literature and documented cases highlight the value of conceptual, integrative frameworks in making multidimensional complexity more accessible. In the Hunter Valley process, six dimensions of PMLU were identified and later consolidated into five thematic categories: rehabilitation, governance, community, First Nations, and climate/environment (Hunter Renewal, 2023; Crofts & Phelan, 2025). This structure

helped participants place technical closure issues within broader social, economic, and cultural priorities. The Five Capitals framework serves a similar purpose by organising impacts across natural, human, social, manufactured, and financial capital (Côte et al., 2023; Simpson et al., 2025; Worden et al., 2024). In this way, complex environmental and economic assessments are translated into balanced narratives that show how different domains are connected and where trade-offs may occur. The strength of such frameworks lies not in oversimplification, but in making relationships and tensions transparent.

Visual and spatial tools are also particularly effective in communicating complex land-use constraints and opportunities (Smith et al. 2025). In the Bowen Basin workshops, participants used illustrated hypothetical mine sites to map preferred land uses across pits, waste areas, buffers, and tailings dams (Everingham et al., 2018; Rolfe et al., 2018). Layered maps and domain-based assessments allowed stakeholders to see hydrological limits, contamination risks, and grazing potential at the same time (Downes & Gardner, 2022; Larance, 2012). In the Latrobe Valley process, abstract quantitative scenario presentations were found to be less engaging without sufficient spatial context. The evaluation recommended more experiential, precinct-scale assessments and interactive visual materials (Foran et al., 2024; Foran & Reeves, 2026). Youth engagement in the Latrobe project further showed how accessible digital tools—such as “mud maps” and Minecraft modelling—can help participants explore land-use ideas in practical and tangible ways (Foran et al., 2024).

Visualisation tools, including conceptual landform diagrams, cross-sections, compatibility matrices, and GIS layers, translate abstract rehabilitation standards into landscape futures that stakeholders can question and discuss (Akbar et al., 2021; Marttunen et al., 2015; World Bank, 2024). Importantly, effective communication does not remove uncertainty. Maps and diagrams should clearly show residual risks, knowledge gaps, and conditional feasibility (Downes & Gardner, 2022; Kivinen et al., 2018).

Emerging technologies expand these communicative possibilities. Digital GIS platforms, interactive dashboards, and three-dimensional modelling environments allow stakeholders to explore alternative land configurations in real time. More advanced tools such as virtual reality simulations, hydrological animations, and drone imagery can make future landscapes more tangible and support informed deliberation under uncertainty (Luyet et al., 2012; Marttunen et al., 2015). However, technology should support facilitation rather than replace it. Digital tools enhance inclusion only when combined with guided interpretation, culturally appropriate framing, and structured opportunities for questioning and reinterpretation (Daly et al., 2022; Annandale et al., 2021).

3.10 Case study examples of multistakeholder participation in PMLU planning and repurposing

In addition to the five Australian cases presented earlier, we have synthesised several international documented examples of rightsholder and multistakeholder engagement in PMLU planning, below.

3.10.1 The Aidu oil shale open-cast mine (northeastern Estonia)

When mining ceased at the Aidu oil shale open-cast mine in northeastern Estonia in 2012, the site’s scale—30 km² of deep voids, altered hydrology, and exposed limestone—made conventional rehabilitation both costly and uncertain (Karu, 2025). Instead, local leaders, sports advocates, municipalities, and engineers began to articulate an alternative vision: transforming the mine voids into a world-class rowing centre. This early collective imagining set the tone for a repurposing framework driven as much by community visioning and strategic land-use planning as by technical design.

The process unfolded through three interconnected phases. The first phase centred on closure planning, including initial risk-reduction measures such as stabilising slopes, managing water flows, and revegetating disturbed areas. As early as 2008, local rowing organisations and regional authorities recognised the potential of the mine's long, linear voids and deep, calm waters. This recognition prompted feasibility studies, community discussions, and a redesign of the rehabilitation plan to accommodate a future water sports facility rather than a return to a near-natural state. This shift reframed closure planning as a broader landscape repurposing exercise aligned with regional tourism ambitions.

The second phase involved coordinated design and engineering, integrating international rowing standards, hydrological modelling, landscape engineering, and biodiversity considerations. The aim was not only to create a 2-km, competition-standard rowing course but also to reshape the mine voids into safe, accessible, and ecologically supported water bodies. Throughout this phase, local residents, sports associations, environmental groups, educators, and government authorities were engaged at different decision points. Funding was secured through a combination of European Union structural funds, national programs, and local contributions, reinforcing regional ownership of the project.

In the final phase, as the rowing course and associated facilities took shape, the project evolved into a multifunctional public space supporting recreation, tourism, elite sport training, community pride, and environmental education.

3.10.2 Luscar and Gregg River Mines (Alberta, Canada)

Mine closure at the Luscar and Gregg River Mines in Canada's Rocky Mountain Foothills created a strategic opportunity to rethink the future of more than 7,000 hectares of reclaimed land (Karmacharya et al., 2011). Recognising that both ecological values and community uses would shape this landscape long after mining ceased, the Government of Alberta initiated a multi-year, collaborative planning process.

The process unfolded through seven structured stages: project initiation, data gathering, scenario development, draft plan preparation, plan review, implementation planning, and monitoring. From the outset, authorities emphasised that the plan could not be developed by government and industry alone. It needed to integrate ecological science, regulatory requirements, and—critically—the lived knowledge and aspirations of communities, recreational users, conservation groups, and Indigenous land users.

Stakeholder engagement was embedded throughout all stages. After a working group was established in 2006, the process began with information-sharing and field orientation sessions, ensuring that all participants—including those unfamiliar with the reclaimed landforms—developed a shared baseline understanding of terrain, habitat conditions, and reclamation outcomes.

Four focus groups—representing conservation interests, motorised recreation groups, tourism operators, and hunting and wildlife organisations—were convened to articulate their values, examine trade-offs, and co-develop future management concepts. The process was iterative and dialogic. Participants first identified constraints and opportunities, then reviewed four alternative land-management scenarios ranging from ecological protection to more intensive human use. Through facilitated workshops, mapping exercises, and joint problem-solving, the groups gradually converged on a preferred scenario that balanced watershed protection, wildlife conservation, and controlled public access.

This preferred scenario was subsequently revisited, refined, and translated into a compatibility matrix outlining which activities should be permitted, restricted, or prohibited across different parts of the landscape. Five strategic goal areas—wildlife protection, watershed health, recreation management, communication and stewardship, and compatible economic activity—were developed from the matrix, each supported by detailed objectives and implementation strategies. The framework ultimately shifted post-

mining land-use planning from a narrow, site-specific exercise to a landscape-scale, multi-value planning process.

4 Setting up the framework

4.1 Introduction and context of use

Although the guidance spans more than 20 pages, it remains high-level. As this project was conducted as a desktop exercise only, the framework will need to be piloted in practice, and the guidance notes subsequently refined, adapted, and expanded based on implementation experience.

Our approach was not to duplicate existing processes, but rather to provide specific and targeted mechanisms to support and 'plug into' closure planning for locations where there is consideration of repurposing.

The Mine Repurposing Framework is a participatory process for identifying rightsholder and stakeholder values, aspirations and preferred repurposing options after mining.

The application of this framework is inherently dependent on the specific context in which it is used. It is designed to be flexible, allowing users to adapt the process to reflect the unique circumstances of each site. In practice, this means that some steps may be skipped, combined, or undertaken in a different order, depending on the needs, priorities, and stage of the project.

The **leadership** of the process will also vary according to context. For example, in the case of an abandoned mine, the initiative may be driven primarily by local authorities, community groups, or third-party investors seeking to activate the site. In contrast, an operating mine may be led by the company itself, in collaboration with regulators and rightsholders, to ensure that any repurposing aligns with ongoing operational requirements and stakeholder obligations. In some circumstances, the mine operator may be willing to seek regulator approval to change the designated PMLUs to encompass repurposing options.

Scale is another important factor in determining how the framework is applied. Some sites may involve multiple repurposing options across different tenures. This could include buffer land and special purpose leases, across extensive land areas, requiring careful prioritisation and phased implementation. Others may present only one or two feasible options within a smaller footprint, allowing for a more targeted and straightforward assessment process.

Ultimately, the framework is intended as a **guiding structure** rather than a rigid set of rules. Its flexibility ensures it can accommodate a wide range of site conditions, stakeholder configurations, and project objectives, enabling the mine repurposing process to be tailored for meaningful, practical, and context-appropriate outcomes.

Importantly, the framework authors acknowledge that undertaking a multistakeholder and rightsholder participatory approach to assessing repurposing options requires significant financial and human resources and relevant and accessible data. Consideration of these realities is integrated into the framework.

4.2 The key themes from the Darwin workshop: listening to diverse perspectives

The data from the seven groups who participated in the annual CRC TiME project workshop, held in 2025, was analysed and synthesised into the following high-level findings. These then directly informed the development of the repurposing framework. To support the veracity of the evidence base, the synthesised outputs from each group are provided in Appendix 6.2.

4.2.1 Key similarities across groups

- Most groups (excluding the mining company) wanted early-stage involvement and a clear understanding of the process and participants.
- Many groups (e.g., Indigenous, community, pastoralists) want access, contribute to, and interpret data relevant to the repurposing process.
- Indigenous groups, pastoralists, and local governments all raised issues of land rights, boundaries, and ownership as key information at early stages.
- Local and state governments, Indigenous groups, and mining companies emphasised the need to draw on existing governance models.
- Multiple groups (e.g., Indigenous, community, pastoralists) called for clarity of rights and roles in repurposing, who has the right to decide and how decisions are made?
- Multiple groups indicated trust of the company and government was critical.
- Community groups want agency and input into governance, not just consultation.
- Most require aligning plans with regional or state strategies and regulatory alignment.
- All groups thought about risk. Mining companies focused on reputational and financial risk. Indigenous groups framed risk through environmental and cultural lenses. Pastoralists and local governments discussed environmental risks (e.g., water quality, air/noise).

4.2.2 Key differences across groups

Table 2 Key differences across groups

Group	Unique perspectives
Mining Companies	Internal pre-engagement planning was non-negotiable; engagement occurs only after executive sign-off. Engagement is economically and reputationally contingent.
Indigenous Groups	Focused on relational governance, cultural mapping, and spiritual connection to land. Engagement must follow Indigenous protocols, be slow and trust-based.
Local Government	Focused on integrating with existing planning mechanisms, maintaining multiple land use options, and ensuring economic and infrastructure continuity (e.g. rates base, local businesses).
Pastoralists/Landowners	Wanted early transparency, clarity about other stakeholders' intentions, and involvement throughout. They focused on water quality and sought rationale for new governance mechanisms.
Community & Civil Society	Stressed capability and accessibility in participation. Called for inclusive governance, contextual understanding, and involvement of youth. Want agency and trust.

Business	Focused on funding and business case, skills, and economic future for region.
State Government	Stressed the need to establish clear governance processes, where government should facilitate, incentivise and regulate the process.

Stakeholder Process Typology

Stakeholder Group	Process Start Point	Engagement Style	Primary Focus	Governance Orientation
Mining Companies	Internal scenario & risk analysis	Phased, selective	Financial, legal, executive mandates	Corporate, top-down
Indigenous Groups	Cultural and spiritual connection to Country	Kinship-led, relational, time-flexible	Cultural integrity, historical justice	Relational, protocol-based
Local Government	Policy & plan alignment	Formal	Community services, rates, infrastructure	System-integrated
Pastoralists	Immediate engagement & transparency	Direct, early-stage	Resource access & quality	Practical, stakeholder-driven
Community/Civil Society	Community readiness	Inclusive, tailored	Empowerment, governance role	Bottom-up
State Government	Governance coordination & risk alignment	Continuous, structured	Regulation, facilitation	Oversight & system-level
Business	Regional economic planning	Collaborative, investment-oriented	Economic continuity, market opportunities	Private-sector

5 The framework

5.1 Conceptual model

Our Conceptual Model (**Error! Reference source not found.**2) for the Mine Repurposing Framework (**Error! Reference source not found.**) centres rightsholders (see S.1.1.2).

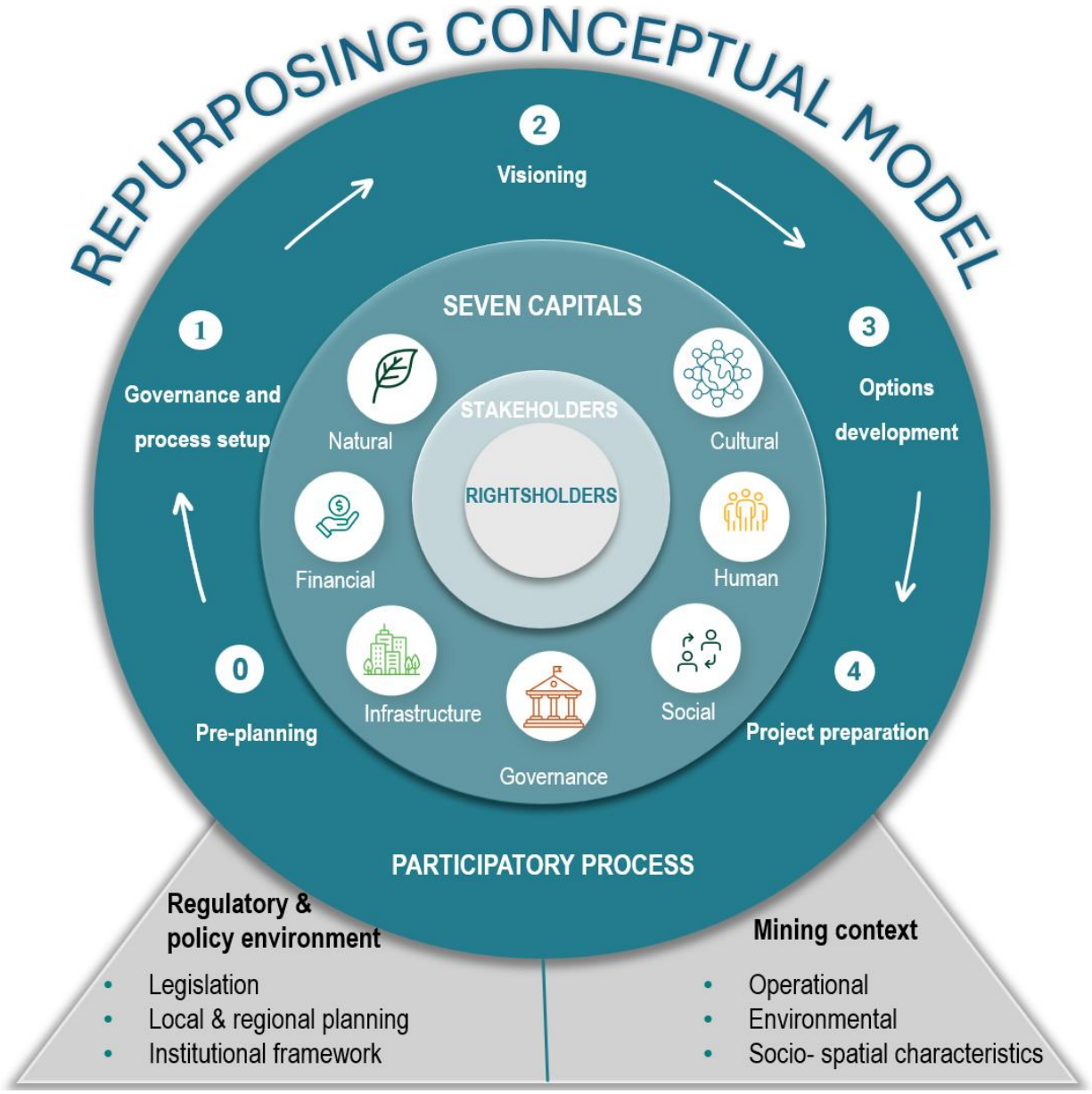


Figure 2 Conceptual Model for Participatory Mine Repurposing (Parmenter et al., 2026).

As a reminder, we define **repurposing** as "The way in which a mine site or mine site assets are adapted to an alternative use after operations have ceased".[2] Mine land repurposing can be understood through a **Seven Capitals** perspective (Box 1), recognising that a post-mining transition not only involves environmental rehabilitation or restoration but a broader socio-economic and institutional transformation.

Together, these seven capitals highlight that successful mine land repurposing depends on restoring ecosystems, rebuilding livelihoods, maintaining community cohesion, reusing infrastructure, mobilising finance, respecting cultural identity, and strengthening institutions in a balanced and integrated way.

Box 1: Seven Capitals

[2] Hamblin and Gardner. (2022). Planning for mine closure: comparative mapping of the regulatory frameworks for mine closure planning in Western Australia, Queensland, and Victoria. In Tibbett, Fourie and Boggs (eds), Mine Closure 2022. Australian Centre for Geomechanics, Perth. Doi: 10.36487/ACG_repo/2215_13

Natural capital focuses on restoring degraded ecosystems—rehabilitating soils, treating contaminated water, rebuilding biodiversity, and stabilising landscapes. Ecological recovery reduces long-term liabilities and creates the foundation for new productive uses such as agriculture, recreation, cultural connection or renewable energy.
Cultural capital recognises community identity, and Indigenous knowledge systems. Successful repurposing balances honouring the past with enabling new narratives and economic futures.
Human capital involves reskilling workers, improving health outcomes, and building adaptive capacity as communities shift away from mining dependence. Workforce retraining and entrepreneurship are essential to creating new livelihood pathways.
Social capital reflects the trust, networks, and cooperation needed to guide transition. Inclusive planning processes and collaboration among communities, governments, former mining companies, and Indigenous groups strengthen legitimacy and reduce conflict.
Infrastructure capital includes the infrastructure left behind—roads, buildings, power connections, and pits—which can be adaptively reused rather than abandoned. Strategic reuse lowers redevelopment costs and preserves valuable assets.
Financial capital provides the resources required for rehabilitation and redevelopment. Closure funds, public investment, and private financing must be transparently managed to ensure long-term sustainability.
Governance capital underpins all others. Effective regulations, transparent institutions, and accountable decision-making ensure environmental compliance, equitable benefit distribution, and long-term stewardship.

The framework **process** is laid out in four phases and is designed to complement any existing pre-planning activities undertaken by a mining company. The four phases are preceded by an initial pre-planning phase designed for the initiator of the process, though support from existing mining company and government to source data will be required.

Underpinning the framework process is the mining context and the regulatory environment.
The **Mining Context** refers to the specific operational, environmental, economic, and socio-spatial characteristics of a mining site and its surrounding region that shape post-closure repurposing opportunities and constraints. It influences the technical complexity of rehabilitation, the availability of infrastructure for reuse, the level of environmental risk, the social impacts of closure, and the feasibility of alternative land uses. Understanding the mining context is essential for designing realistic, site-specific repurposing strategies rather than applying generic redevelopment models.

The **Regulatory Environment** refers to the legal, policy, local and regional planning, and institutional framework that governs how a mine transitions from active extraction to closure, rehabilitation, and subsequent land reuse. It determines the quality of environmental restoration, the flexibility for adaptive reuse, the accountability of mining companies and public authorities, financial assurance requirements and pathways to relinquishment. A clear regulatory context reduces uncertainty, supports investor confidence, and helps ensure that repurposed mine lands deliver long-term environmental, economic, and social value.

5.2 Overview of four phases

The framework is laid out in four phases (**Error! Reference source not found.**), preceded by an initial pre-planning phase designed for the initiator of the process, though support from existing mining company and government to source data will be required.

5.3 Guidance notes

These Mine Repurposing Guidance Notes are designed to be adaptable and non-prescriptive, offering practical direction on how to apply the Mine Repurposing Framework across a wide range of contexts. Recognising that each site presents unique environmental, social, economic, and regulatory conditions, the Guidance Notes provide overarching principles, recommended approaches, and illustrative examples rather than fixed requirements. This flexibility enables practitioners, governments, and stakeholders to tailor implementation strategies to local circumstances, capacities, and priorities while remaining aligned with the core objectives and structure of the Mine Repurposing Framework.

At this stage, the **Guidance Notes serve as a high-level or "skeleton" document,** establishing the foundational structure and key considerations for implementation. They are intended to be further refined and expanded following practical testing and piloting of the Framework in real-world applications. Insights, lessons learned, and rightsholder/stakeholder feedback from these initial trials will inform the development of more detailed methodologies, tools, and case-based guidance to strengthen future iterations.

Figure 3 Mine Repurposing Framework (Parmenter et al. 2026).

Phase 0 Pre-planning

Step 0.1 Define geographic scope

Objectives

- Define the geographic scope of land to be considered for repurposing.
- Identify relevant local and regional planning instruments, regulatory requirements, land capability, tenure, and zoning.
- Review existing data and identify data gaps requiring further collection.

Outputs

- A map defining the potential geographic scope for repurposing.
- Spatial mapping of land capability, tenure, and land-use zoning.
- A database to store and manage relevant data that is accessible to all participants.
- A list of data gaps and additional data required to be collected.
- A list of potential barriers to multi-actor participatory approach to repurposing. They may include inadequate regulations, managing liabilities, the rarity of relinquishment and the associated issue of residual risk, zoning restrictions and the lack of publicly accessible data.

Description

One of the first considerations is to clearly define the land proposed for repurposing. All relevant areas associated with the mining lease, as well as any associated landholdings, should be taken into account. A list of areas to include is provided Box 2.

Box 2: Areas to include when considering geographic scope

Mined land

- Areas where extraction has occurred
- Includes open pits, underground voids, tailings storage facilities, and waste rock dumps

Industrial precinct

- Processing plants
- Workshops and service areas
- Power and water infrastructure
- Transport/logistics hubs (e.g. rail, conveyors)

Buffer lands

- Land held for environmental, noise, dust, or visual buffers
- Often includes significant biodiversity, cultural heritage, or recreational potential
- May offer opportunities for conservation, tourism, or community uses

Associated infrastructure corridors

- Access roads, railway lines, pipelines, transmission lines, water pipelines, and easements
- May connect the site to towns or regional infrastructure

Surrounding land owned or managed by the operator

- Additional freehold or leasehold land used to support operations (e.g. worker housing, grazing land)

Regional context

- Consider how repurposing options sit within the broader regional context (e.g. proximity to towns, communities, national parks and reserves, and regional aspirations).

Gather and document information from relevant sources, including companies, government, planning documents, environmental studies, and local knowledge. A list to help guide this step is provided in Box 3 below.

Note: This analysis should guide—not restrict—discussion. New ideas should still be explored even if there are regulatory or technical hurdles.

Box 3: Data sources to include in knowledge base

Legal, planning & governance framework

- Land tenure (ownership, leases, native title, Indigenous land use agreements – usually confidential)
- Regulatory requirements (federal, state, and local legislation and approvals)
- Local/regional planning instruments
- Local environmental plans (LEPs)
- Regional growth strategies
- Land use zoning maps
- PMLUs as stated in environmental authorities, mine approvals, and closure plans
- Barriers to changing PMLUs e.g. zoning restrictions, regulatory constraints, tenure limitations, incompatible land capability

Environmental and social assessments

- Closure criteria and closure plans
- Long-term liability and stewardship obligations
- Social impact assessments (SIA) and SIA for closure
- Environmental impact assessments (EIA)
- Baseline and impact studies, including:
    - Groundwater
    - Surface water
    - Soils and contamination
    - Biodiversity
    - Cultural heritage (tangible and intangible)
    - Tailings and waste rock stability

Map land capability and land use zones (GIS)

- Land capability mapping:
  Assess physical suitability of the land for various uses (e.g. agriculture, conservation, housing, recreation) based on state or regional criteria.
- Land use zones:
  Map current zoning classifications (e.g. industrial, environmental management, rural) from LEPs and regional plans.

Analyse PMLU commitments

This information should be sourced from the mine operator.

Identify:

- PMLUs already approved for current mining operations
- Progressive rehabilitation and closure plan (PRCP) designations
- Potential constraints (e.g. regulatory, technical, legal)
- Assess feasibility of proposed repurposing ideas against:
  - Closure criteria
  - Zoning compatibility
  - Rehabilitation progress
  - Known community aspirations and concerns (i.e., from social impact assessments (SIA) and cultural heritage management plans (CHMPs) for the mine).

Further reading:

1. Young, R.E., Manero, A., Miller, B.P., Kragt, M.E., Standish, R.J., Jasper, D.A., & Boggs, G.S. (2019). A framework for developing mine-site completion criteria in Western Australia: Project Report. The Western Australian Biodiversity Science Institute, Perth, Western Australia. Link: https://www.wa.gov.au/government/publications/framework-developing-mine-site-completion-criteria-western-australia

2. Worden, S., Côte, C., Svobodova, K., Arratia-Solar, A., Everingham, J., Asmussen, P., Edraki, M., & Erskine, P. (2021). Baseline works for mine rehabilitation and closure collaboration project. Sustainable Minerals Institute, The University of Queensland: Brisbane, Australia. Link: https://www.csrm.uq.edu.au/publications/baseline-works-for-mine-rehabilitation-and-closure-collaboration-project

3. Worden, S., Svobodova, K., Côte, C., & Bolz, P (2024). "Regional post-mining land use assessment: An interdisciplinary and multi-stakeholder approach." Resources Policy 89 (February): 104680. https://doi.org/10.1016/j.resourpol.2024.104680.

Step 0.2 Map rightsholders and stakeholders

Objectives:

- Identify rightsholders and stakeholders required to implement the repurposing framework.
- Identify interest in participating in the repurposing framework process.

Outputs:

- A rightsholder and stakeholder map identifying potential participants in the repurposing framework process.

Description:

In Australia's mining jurisdictions, engagement with stakeholders and rightsholders on PMLUs is a regulatory requirement. Based on current knowledge, all relevant rightsholders and stakeholders should be identified and understood, with particular attention to underrepresented groups. This helps to ensure that repurposing processes are equitable, socially representative, and inclusive of diverse perspectives. The following checklist (Box 4) can assist with this process.

Box 4: Stakeholder and rightsholder checklist

Identification

☐ Identify all relevant rightsholders and stakeholders, including underrepresented groups.

☐ Consider:

– Geographic footprint (physically affected parties)

– Interests (potential gains or losses)

– Influence (decision-making authority or capacity to shape outcomes)

☐ Cover full mining lease area and associated landholdings.

Inclusive representation

☐ Include Indigenous rights and interests holders and their recognised governance bodies.

☐ Include women, youth, elderly, and people with disability as appropriate.

☐ Include culturally and linguistically diverse communities.

☐ Include environmental and social NGOs, technical experts, industry representatives, and relevant government agencies.

Engagement pathways

☐ Respect cultural protocols and governance structures.

☐ Select range of appropriate communication channels (e.g. digital, radio, face-to-face).

☐ Choose suitable engagement formats (e.g. workshops, interviews, surveys, roundtables).

☐ Use trusted intermediaries (e.g. community leaders, NGOs, peak bodies).

Stakeholder map

☐ Establish a 'living' stakeholder map.

☐ Regularly review and update the map as conditions or stakeholders change across the life of the project.

☐ Integrate the map into governance, decision-making, and subsequent framework phases.

Scale and intensity

☐ Match engagement depth to project complexity and the scale of potential social, cultural, and environmental impacts.

For example, The Hunter Valley Renewal Project engaged over 130 participants, including First Nations Elders, landholders, technical experts, mine rehabilitation specialists, former UN officials, and community members through a combination of workshops, interviews, and surveys (Hunter Renewal, 2023). See below for full reference.

Further reading:

1. NSW Government. (2025). Practice note: Engaging with Aboriginal communities. Social Impact Assessment practice notes. Link: Practice Note - Engaging with Aboriginal communities

2. Hunter Renewal. (2023). After the coal rush, the cleanup: A community blueprint to restore the Hunter. Hunter Renewal and Lock the Gate Alliance. Link: https://assets.pc.gov.au/392337/sub206-circular-economy-attachment.pdf?VersionId=pnajaB_66R5n2Qaky60NyvRSbsmokW8V

3. Dzakpata, I., Qureshi, M., Kizil., M. & Maybee, B. (2021). Exploring the issues in mine closure planning. CRC TiME Limited, Perth, Australia. Link: https://crctime.com.au/crcwp/wp-content/uploads/2025/04/Final-report-Project-2.2-Exploring-the-issues-in-mine-closure-planning.pdf

Step 0.3 Engage early with rightsholders

It is essential to engage rightsholders at the outset, before convening a broader group of stakeholders. Rightsholders—particularly Indigenous Peoples—hold distinct interests, and lived connections to the land, resources, or issues under consideration. Their rights are not merely one perspective among many; they carry legal, cultural, and often constitutional significance.

Early engagement ensures that their voices shape the direction, scope, and design of any initiative from the beginning, rather than being retroactively consulted once key decisions have already been framed. This approach fosters trust, upholds principles such as free, prior, and informed consent (FPIC), reduces the risk of conflict or project delays, and strengthens the legitimacy and durability of outcomes.

Objectives:

- Engage with rightsholders to build understanding, trust, and support for progressing the mine repurposing framework process.
- Seek informed agreement from rightsholders to participate in and proceed with the framework process.

Outputs:

- Documented agreement and commitment from rightsholders to proceed with the mine repurposing framework process.

The process should begin with a comprehensive review of outcomes from previous engagement activities with rightsholders and other key stakeholders, including community consultations, workshops, and formal negotiations. This review should capture prior perspectives, concerns, aspirations, and expectations relating to mine closure and PMLU and/or repurposing, ensuring continuity and avoiding duplication of discussions.

Existing agreements and commitments—such as Indigenous land use agreements (ILUAs), access arrangements, benefit-sharing agreements, and cultural heritage management plans—must be carefully considered and respected. The framework process should align with these negotiated terms and acknowledge any obligations, constraints, or opportunities they create for future land use and repurposing options. ILUAs rarely address PMLU, so such discussions are an opportunity to do so.

At a high level, engagement should seek to identify which repurposing options are broadly viewed by rightsholders as acceptable, conditionally acceptable, or unacceptable. This includes understanding cultural, environmental, social, and economic considerations that influence these views, as well as any non-negotiable values or sensitivities associated with the land.

Based on this shared understanding, commitment should be secured from all relevant parties to participate in the mine repurposing framework process. This includes agreement on the purpose, scope, roles, decision-making approach, and engagement principles that will guide the process. Securing this commitment establishes a clear mandate, promotes transparency, and ensures that the exploration of repurposing options is undertaken collaboratively, inclusively, and in good faith.

Further reading:

1. Department of Industry, Innovation and Science. (2016). Working with Indigenous communities: Leading practice sustainable development program for the mining industry. Australian Government.

2. NSW Government. (2024). Collaborating when engaging with Country Movement & Place Aboriginal and/or Torres Strait Islander Engagement. Movement and Place. Link: https://www.movementandplace.nsw.gov.au/sites/default/files/guides/pdf/mop/collaborating-when-engaging-with-country.pdf

3. Barnes, R., Keenan, J., Williams, C. & Hamilton. (2025). Restoring Country: Exploring Indigenous-led participation in mine closure and environmental services: Report on the Collaborative Webinar Series. CRC TiME Limited.

Step 0.4 Identify initial funding source

Objectives:

- Identify and secure an initial funding source to support the participation of people and the commencement of the mine repurposing framework process.

Outputs:

- Agreement in principle or formal commitment with an initial funding source to provide funding for the early stages of the process.

Description:

While the initial champion of the land repurposing process could be any number of actors—including community groups, stakeholders, rightsholders, non-government organisations, mining companies, or government agencies—the practical leadership role often depends on capacity, influence, and resources. Champions play a critical role in convening rightsholders and stakeholders, facilitating early engagement, and maintaining momentum throughout the process.

In most cases, the initial funding required to support the repurposing framework process—including engagement activities, technical studies, and capacity-building initiatives—is likely to come from either the mining company or government. Securing sustainable funding at the outset is essential to ensure that the process can operate effectively over the long term, maintain credibility among stakeholders, and avoid delays. In some contexts, a shared funding model between government, industry, and community partners may be appropriate to demonstrate collaborative commitment and enhance transparency. Ensuring that funding and leadership are clearly identified early provides the foundation for a credible, inclusive, and well-supported repurposing process.

Further reading:

1. World Bank. (2024). Repurposing coal mining lands for a just transition: Methods, financing options, and governance solutions. World Bank Group. Link: https://openknowledge.worldbank.org/entities/publication/854d1017-02db-487a-8da3-df00ffaa7788
2. TRACER. (2022). “Decision Support Toolkit on post mining landscape management.” Project No: 836819 Smart strategies for the transition in coal intensive regions. Link: https://tracer-h2020.eu/wp-content/uploads/2022/10/TRACER-D6.6-Decision-support-tool-B-post-mining_final.pdf.
3. Finucane, S.J. & Tarnowy, K. (2019). 'New uses for old infrastructure: 101 things to do with the ‘stuff’ next to the hole in the ground', in A.B. Fourie & M. Tibbett (eds), Mine Closure 2019: Proceedings of the 13th International Conference on Mine Closure, Australian Centre for Geomechanics, Perth, pp. 479-496. Link: https://papers.acg.uwa.edu.au/p/1915_40_Finucane/

Step 0.5 Identify an implementation partner/coordinating body

Objectives:

- Identify a neutral, third-party facilitator to oversee and guide the framework implementation process.

Outputs:

- Agreement with potential implementation partner/coordinating body.

The need for an implementation partner/s will depend on the scale and complexity of the project, as well as the existing level of trust and working relationships among rightsholders, proponents, and other stakeholders. Where appointed, the implementation partner will play a central role in introducing the framework process to rightsholders and stakeholders and supporting the establishment of appropriate governance mechanisms.

The implementation partner may also be responsible for coordinating and maintaining a central database of materials collected through the repurposing framework process, including engagement records, technical studies, and agreed outputs. In addition, the partner may facilitate meetings, workshops, and other engagement activities on behalf of the parties to support transparent, inclusive, and well-documented decision-making.

Potential partners should demonstrate expertise in coordinating and facilitating participatory processes in complex, multi-actor contexts, as well as proven experience working with Indigenous communities. This includes the capability to recognise and integrate local Indigenous governance structures, decision-making protocols, and cultural considerations into all activities required by the framework. Independence, credibility, transparency and cultural capability are essential to building confidence in the process and ensuring its integrity.

Further reading:

1. Reeves, D., Dowell, K. & Welch, J. (2025). 'Argyle diamond mine: a model for First Nations engagement', in S. Knutsson, A.B. Fourie & M. Tibbett (eds), Mine Closure 2025: Proceedings of the 18th International Conference on Mine Closure, Australian Centre for Geomechanics, Perth, Link: https://doi.org/10.36487/ACG_repo/2515_42

2. Hunter Renewal. (2023). After the coal rush, the cleanup: A community blueprint to restore the Hunter. Hunter Renewal and Lock the Gate Alliance. Link: https://assets.pc.gov.au/392337/sub206-circular-economy-attachment.pdf?VersionId=pnajaB_66R5n2Qaky60NyvRSbsmokW8V

PHASE 1 Governance and process setup

Step 1.1 Establish governance mechanisms

Objective:

- Establish a participatory approach to governance, utilising existing governance mechanisms where appropriate.

Output:

- Governance mechanisms with funding support.

Description:

An appropriate governance body, or bodies, should be established to guide engagement and decision-making. This may take the form of a stakeholder panel, participatory advisory committee, community consultative panel, or reference group, or—where appropriate—the adaptation of an existing group. In establishing a repurposing governance body, Indigenous governance protocols, decision-making processes, and timelines should be explicitly acknowledged and respected, and engagement should be aligned accordingly.

A clear and well-defined governance framework should be set out through the development of a terms of reference (ToR) for the group. The ToR should articulate the groups' purpose and objectives, outline its structure, describe the member selection process, specify membership terms, and set out operating procedures, including how the panel will function and make decisions. The selection of members should be undertaken through a transparent and inclusive process. This includes defining clear selection criteria, conducting a public expression of interest process, and using an assessment approach to support balanced representation from relevant rightsholders and stakeholders. Sustainable funding arrangements should be identified at the outset to ensure the group can operate effectively over the long term, potentially over several years. Funding sources should be clearly defined and confirmed as sufficient to support ongoing governance activities.

Consideration should also be given to existing governance arrangements. Where appropriate, existing mine community consultative committees or reference groups should be reviewed to determine whether they can be adapted or repurposed to fulfil the governance role, avoiding unnecessary duplication. Established examples of similar governance models can provide useful guidance. Relevant examples include the Gove Peninsula Futures Reference Group in the Northern Territory[3], the Black Rock Motor Resort Community

[3] Boggs, G., Measham, T. & D'Urso, J. (2023). "What are we transitioning into? Re-thinking the model of mine closure." Paper presented at Mine Closure 2023: 16th International Conference on Mine Closure. https://doi.org/10.36487/ACG_repo/2315_022.

Consultative Panel in New South Wales[4], and Regional Post-Mine Land Use Working Group in the Greater Whitsunday Region (Reimagine Rehab)[5].

Further reading:

1. ICMM. (2025). Handbook on multistakeholder approaches to socio-economic transitions in mining. Link: https://www.icmm.com/en-gb/guidance/social-performance/2025/multistakeholder-approaches-socio-economic-transitions
2. Victoria State Government. (2020). A framework for place-based approaches. The start of a conversation about working differently for better outcomes. https://www.vic.gov.au/sites/default/files/2020-03/Working-%20together-in%20place-Policy%20Framework.pdf

Step 1.2 Co-design engagement methods

Objective:

- Design a collaborative engagement approach that is appropriate to the local context and supports meaningful participation by all stakeholders and rightsholders.

Output:

- Agreement with partners, stakeholders, and rightsholders on the broader engagement plan for subsequent phases of the framework process.

Description:

The engagement method should be co-designed with rightsholders and stakeholders to ensure it reflects local cultural protocols, governance structures, decision-making processes, and capability and capacity considerations. The approach should build on lessons learned from earlier engagement activities and align with the objectives, scope, and governance arrangements established for the repurposing framework process.

An engagement plan should be produced. It should outline the types of engagement activities to be used—such as meetings, workshops, site visits, or co-design sessions—along with their sequencing, timing, and intended outcomes. Particular attention should be given to creating safe and inclusive spaces for dialogue, managing power imbalances, and ensuring that the perspectives of rightsholders, stakeholders, and marginalised groups are appropriately recognised and weighted.

The plan should also address practical considerations, including resourcing, facilitation, information sharing, and feedback mechanisms, as well as how input from engagement activities will be documented and used in decision-making. Agreement on the engagement plan provides a shared and transparent basis for broader engagement and helps build confidence in the integrity and effectiveness of the process.

Further guidance is provided in the box below (Box 5).

[4] Black Rock Motor Resort Community Consultative Panel. (2025). Terms of Reference. https://cdn.prod.website-files.com/67492e30720eea8d5dfdb01e/68bf77573ee1ef103a8d1425_BR-CCP%20Terms%20of%20Reference.pdf

[5] 1. Reimagine Rehab. (2025). A prospectus for advocacy and investment in transformative rehabilitation and post-mining land uses in the Greater Whitsunday Region. https://www.rcoe.com.au/reimagine-rehab

Box 5: Engagement activities

Tailor the engagement design to the context

- Design the engagement process to reflect the specific context and the governance mechanism identified earlier (e.g. steering committee, advisory group).
- Different contexts will require different engagement approaches and methods.

Engage groups separately in the first instance (see Step 2.2)

- Where groups hold differing perspectives, interests, or power dynamics, consider engaging them separately at the outset.
- Subsequently, bring groups together to explore common ground and develop shared understanding.

Use workshops as the primary engagement format

- In most cases, workshops will be the most effective format for group-based engagement.
- Workshops should be supplemented with other engagement methods used in earlier phases—such as community surveys or interviews—to gather broader input.

Incorporate deliberative approaches

- Where appropriate, embed deliberative elements into workshops, including:
    - Facilitated discussions by an expert facilitator between participants and subject matter experts.
    - Activities that promote active listening, shared learning, and collaboration.
- Deliberative engagement goes beyond basic consultation by supporting participants to consider trade-offs, balance competing values, and work toward more informed, consensus-oriented outcomes.

Use visual and experiential tools to support discussion

- Use maps, images, and diagrams to communicate key landscape features and land-use opportunities.
- Where feasible, incorporate experiential learning tools, such as:
    - Site visits to current or former mine areas
    - On-site workshops
    - Interactive mapping platforms
    - Virtual reality (VR) experiences

Support capability building

- Prior to workshops, ensure rightsholders and stakeholders have the knowledge and support needed to participate meaningfully.
- This may include providing background materials, briefings, training, or other capability-building activities.

Plan for work between engagement activities (ongoing preparation and subsequent consolidation)

- Anticipate that work will occur between engagement phases.
- Where a steering committee or similar governance mechanism is in place, this may include:
    - Reviewing engagement outcomes
    - Commissioning additional research or studies

- Planning subsequent phases of engagement.

Further reading:

1. NSW Government. (2025). Practice note: Engaging with Aboriginal communities. Social Impact Assessment practice notes. Link: Practice Note - Engaging with Aboriginal communities
2. Reeves, R., Foran, T., Haque, K., Lee, E., Bush, K., & D. Laing. (2025). An emerging vision for post-mine land use: A synthesis of three community deliberations in the Latrobe Valley. CRC TiME Limited.
3. Mosaiclab. (n.d). A short guide: Deliberative engagement for councils. Link: https://www.vlga.org.au/sites/default/files/Deliberative_Engagement_For_Victorian_Councils_EBOOK.pdf

Step 1.3 Develop framework implementation plan

Objective:

- Develop a clear and practical plan to implement the repurposing framework process.

Output:

- Draft project plan or scope of work to implement the framework process.

Description:

A clear draft project plan, informed by early engagement with rightsholders and stakeholders, should be developed and shared with all potential partners to gather feedback and ensure broad alignment. Where appointed, the independent coordinating or implementation body may take the lead in developing this plan, ensuring it reflects the perspectives, priorities, and constraints identified by rightsholders and stakeholders.

The project plan should translate the objectives and principles of the repurposing framework into a structured and actionable program of work and comprehensively address the following elements:

- **Initial funding sources:** Identification of potential funding streams, including resources to support capability-building for rightsholders, stakeholders and other relevant parties, enabling meaningful and sustained participation throughout the project.
- **Roles and responsibilities:** Clear definition of the responsibilities of all parties involved – including rightsholders, stakeholders, and the independent coordinating body – to support transparency, accountability, and effective coordination.
- **Key deliverables and timelines:** Outline of major milestones and expected outputs, incorporating local Indigenous governance protocols and recognising the need for trust-based, flexible timeframes to accommodate meaningful engagement.
- **Data management protocols:** Procedures for the collection, storage, sharing, and protection of data and materials, with due regard for confidentiality, cultural sensitivities, and data ownership rights.
- **Budget and resource allocation:** A detailed breakdown of financial and other resources required to deliver the framework process successfully, including allocations for facilitation, capacity-building, and governance support.

The project plan should be treated as a 'living' document and reviewed periodically to incorporate new insights, changing circumstances, or priorities identified through ongoing engagement with rightsholders and

stakeholders. This adaptive approach helps ensure the process remains responsive, inclusive, and culturally appropriate throughout implementation.

PHASE 2 Scoping and visioning

Step 2.1 Conduct engagement by rightsholder/stakeholder group

Objective:

- Engage with a broad range of rightsholders and stakeholders separately to share key data, clarify the planning context, and understand their values, priorities, and aspirations for repurposing.

Output:

- A summary of stakeholder concerns, interests, and early aspirations, organised by group, highlighting shared values and key differences.

Description:

To achieve this, the engagement should include the following key steps:

1. Share accessible materials
    - Provide key information in plain English.
    - Ensure materials clearly explain the context, purpose, and process of the repurposing framework.
2. Clarify boundaries
    - Explain the spatial limits of the areas under consideration.
    - Outline relevant legal constraints, governance frameworks, and decision-making authority.
    - Specify timelines and stages for planning and implementation.
3. Identify focus areas for repurposing
    - Discuss potential opportunities for ecological restoration, economic reuse, cultural revitalisation, and other relevant land uses.
    - Facilitate activities that explore participants' values, interests, and aspirations for the land.
4. Capture key values
    - Identify environmental, cultural, economic, and social values that should guide future land-use decisions.
    - Ensure Indigenous rights, governance structures, and perspectives are fully integrated into discussions.
5. Synthesise insights for planning
    - Collate input from all groups.
    - Highlight shared values, priorities, and any differing perspectives.
    - Use this synthesis to inform decision-making, guide subsequent engagement phases, and support planning for repurposing.
    - Use the process outlined here to help ensure that stakeholders are well-informed, able to participate meaningfully, and that their perspectives are systematically captured to shape future land-use planning in a transparent and inclusive manner.

Further reading:

1. NSW Government. (2025). Practice note: Engaging with Aboriginal communities. Social Impact Assessment practice notes. Link: Practice Note - Engaging with Aboriginal communities
2. European Commission. (2021). Youth for a just transition: A toolkit for youth participation in the Just Transition Fund. Link: https://ec.europa.eu/regional_policy/en/information/publications/guides/2021/youth-for-a-just-transition-a-toolkit-for-youth-participation-in-the-just-transition-fund

Step 2.2 Jointly define guiding principles for repurposing options

Objective:

- Develop guiding principles or priorities to assess and determine future land use options, based on the values and aspirations of rightsholders and stakeholders. This is a big picture stage.

Output:

- A set of collaboratively agreed principles to assess repurposing options.

Description:

This step brings together all stakeholders to collaboratively define guiding principles for assessing potential repurposing options. Participants will review previous engagement data, share values and priorities, and discuss opportunities and constraints to ensure the principles reflect both technical realities and community aspirations.

There are many different methods to undertake a visioning exercise. Box 5 suggests a workshop style approach. In the Latrobe Valley process, the vision was defined as a future in which community values are realised.[6] This meant participants did not begin by debating pit lakes, landforms, or feasibility limits. They began by identifying what mattered most, which for them was: stewardship, wellbeing, identity, belonging, intergenerational opportunity, and ecological repair. Only after that step did they move toward specific land-use ideas and planning principles.

Box 6: Visioning workshop example

Prepare the workshop

- Identify and invite rightsholders and stakeholders (community representatives, regulators, etc.).
- Select a neutral expert facilitator to guide the session.
- Prepare materials: visual aids, mapping tools, sticky notes, or digital collaboration platforms.

Capture perspectives

- Invite participants to share their values, priorities, and aspirations for the site.
- Document key themes in real-time (e.g. on a whiteboard, flip chart, or shared digital space).

Facilitate collaborative early visioning

[6] Foran, T., & Reeves, J. (2026). Insights from implementing a participatory visioning project for post-mining regionalf. CRC TiME Limited.

- Divide participants into small groups to explore desired future outcomes.
- Use visual mapping or storytelling techniques to express ideas.
- Encourage discussion and ensure all voices are heard.

Translate vision into guiding principles

- Bring groups together to identify common values and priorities.
- Develop draft guiding principles that reflect shared aspirations.
- Facilitate discussion to reach consensus or note differing perspectives.

Link principles to decision-making

- Discuss how the guiding principles will be applied to assess future land use options.
- Explore practical implications and next steps.

Document and communicate outcomes

- Summarise the guiding principles, priorities, and key insights.
- Share outputs with all participants for review and validation.
- Confirm next steps, responsibilities, and any follow-up workshops or actions

Further reading:

1. CRiT. 2025. "Transformation options framework guidance for identification and assessment of options for the transformation of former mining and industrial sites." EU Coal regions in transition initiative. Link: https://circabc.europa.eu/ui/group/301e9528-b63b-4ca5-b7fa-c7f879572d5e/library/96d013d5-c62a-4b73-9707-1aa8baffdd1c/details?open=true.

2. Foran, T., & Reeves, J. (2026). Insights from implementing a participatory visioning project for post-mining regional futures. CRC TiME Limited.

Step 2.3 Carry out collaborative visioning

Objective:

- Develop a shared understanding and vision for how mined land might be repurposed after closure, integrating the values, aspirations, and priorities of rightsholders and stakeholders.

Note: This stage is getting into the finer grained details – what the parameters of opportunities are. This step and 2.2 (above) can be rolled into one – if it is apparent early on that there is common ground and shared perspectives amongst the various groups.

Output:

- A report summarising initial ideas, potential opportunities, and identified data gaps to inform further planning and engagement.

Description:

In most cases, a workshop will be the best method for this step. A workshop can be facilitated by the independent implementation partner(s). The workshop is designed to bring together rightsholders,

stakeholders, and project partners to collaboratively explore opportunities for repurposing mined land after closure. Content experts can be invited to share expertise on specific topics. More than one workshop may be required. A process overview is provided in Box 7.

Box 7: Workshop activities

Bring stakeholders and rightsholders together

- Convene joint workshops with rightsholder and stakeholder participants.
- Facilitate dialogue to explore possible repurposing options and emerging priorities identified in earlier engagement phases.

Present collated information and analysis

- Present accessible technical and environmental data, highlighting spatial considerations, legal constraints, and potential ecological, economic, and cultural opportunities. Content experts can be invited to share this information and answer questions.
- Share summaries of stakeholder concerns, values, and aspirations gathered in previous steps.
- Invite communities and businesses to share their future visions and aspirations for the land.

Explore options and identify opportunities

- Facilitate structured activities to generate and discuss potential repurposing scenarios.
- There may be more than one repurposing option.
- Encourage participants to consider multiple perspectives, trade-offs, and synergies between environmental, cultural, social, and economic outcomes.

Identify data gaps and uncertainties

- Document areas where additional information, studies, or technical input is required to support decision-making and how this work could be funded.
- Highlight knowledge gaps related to land capability, environmental restoration, cultural heritage, and regional development potential.

Capture emerging consensus and priorities

- Record shared ideas, values, and preliminary priorities, as well as areas of divergence.
- Ensure Indigenous perspectives, governance protocols, and cultural considerations are fully integrated.

Synthesise outcomes into a joint scoping report

Produce a report summarising:

- Initial repurposing ideas and opportunities
- Stakeholder and rightsholder priorities
- Identified data gaps and research needs
- Potential constraints and considerations for future planning.

Use this report to guide subsequent phases of the framework process, including technical studies, scenario development, and more detailed engagement activities.

Further reading:

1. Hunter Renewal. (2023). After the coal rush, the cleanup: A community blueprint to restore the Hunter. Hunter Renewal and Lock the Gate Alliance. Link: https://assets.pc.gov.au/392337/sub206-circular-economy-attachment.pdf?VersionId=pnajaB_66R5n2Qaky60NyvRSbsmokW8V

2. L'Hommecourt, J., Boucher, M., Desjarlais, G., Grandjambe, J., Grandjambe, M., L'Hommecourt, D., Ladouceur, J., Mercer, C., Mercer, D., Orr, E., Redcrow, A., & Stewart, J. (2022). A two-roads approach to co-reclamation: Centring Indigenous voices and leadership in Canada's energy transition. Canadian Climate Institute / Fort McKay First Nation. Link: https://climateinstitute.ca/publications/two-roads-approach-to-co-reclamation/

PHASE 3 Options development

Step 3.1 Develop repurposing options

Objective:

- Explore potential repurposing options.

Outputs:

- A list of repurposing options based on stakeholder preferences.

Description:

The best method for this step is most likely a workshop, facilitated by the independent expert facilitator. The workshop is designed to bring together rightsholders, stakeholders, and project partners to collaboratively explore opportunities for repurposing mined land after closure or partial relinquishment. More than one workshop may be required. Note that the framework recommends that experts are not brought in until Phase 3 to ensure that the local and regional rightsholders and stakeholders have had a chance to put forward their ideas.

Activities

Create exploratory options

- Develop a list of potential repurposing options.
- Include both desirable and undesirable elements to stimulate open discussion.
- Options can be compiled by an independent body to maintain neutrality if required.

Ensure options reflect stakeholder values

- Ground options in the values, priorities, and aspirations of stakeholders and rightsholders.
- Consider environmental, cultural, economic, human, financial, social and governance dimensions for each option (the seven capitals conceptual framework).

Consider multiple scales

- **Regional level:** Focus on broad land use categories aligned with regional development strategies (e.g., regeneration, renewable energy, agriculture).
- **Site-specific level:** Examine specific assets or parcels of mined land within local or regional contexts.

Include external expertise where needed

- Engage specialists such as business planners, economists, environmental scientists, landscape engineers, or regional development experts to support repurposing options and analysis.
- Determine how the expertise could be funded.

Reference real-world examples

- Use comparable case studies, such as EY's work in the Hunter region[7], to illustrate sequences of future-focused scenarios and potential economic outcomes.

Ensure inclusive participation

- Create space for diverse voices, including youth, Indigenous rights and interest holders, elders, and other marginalised groups.
- Facilitate separate engagement if necessary to ensure all perspectives are heard.

Further reading:

1. Finucane, S., King, J., & Tarnowy, K. (2022). "The 5R model: Facilitating decision-making on repurposing of industrial and ancillary infrastructure." 295–306. https://doi.org/10.36487/ACG_repo/2215_18.

2. Downes, L. & Gardner, A. (2022). Post mining land use – Practice mapping options: Ensham Coal Mine Case Study. CRC TiME Limited. Link: https://crctime.com.au/crcwp/wp-content/uploads/2025/04/Final-report-Project-1.3-Ensham-Case-Study.pdf

3. Morton, A. & Merz, R. (2024). "enviroMETS Lighthouse Projects: A strategic pathway to high-value sustainable post-mining land use." 295–308. Link: https://doi.org/10.36487/ACG_repo/2415_21.

Step 3.2 Assess and identify preferred options

Objective:

- Identify preferred option/s amongst stakeholders and rightsholders. This step is designed to bring together rightsholders, stakeholders, and project partners to collaboratively explore opportunities for repurposing. More than one workshop may be required.

Outputs:

- A list of preferred repurposing option/s including consideration of community acceptability risk.[8]

Description:

Options are co-developed with rightsholders and stakeholders, reflecting their priorities and place-based meanings, while analytical tools remain simple, transparent, and accessible, with assumptions and reasoning clearly visible. The aim is to identify multiple viable pathways rather than a single optimal ranking.

Assessment tools

Decision support frameworks or tools are widely used in post-mining land use planning, offering structured ways to compare alternative options, explain trade-offs, and document decisions. While it can support transparency and accountability, many tools such as Multi-Criteria Analysis (MCA), Land suitability assessment (LSA), and Benefit Cost Analysis (BCA) are highly technical and can exclude those most affected by closure outcomes. Complex models, weighting systems, and scoring algorithms may favour expert knowledge, narrow what counts as evidence, and embed hidden value judgments. This has led to growing interest in participatory and deliberative approaches that combine technical rigour with inclusivity, learning, and legitimacy. However, multi-actor or participatory decision frameworks such as participatory multi-criteria exercises still carry risks, including the potential loss of nuance when complex perspectives are

[7] EY. (2022). Diversification and growth transforming mining land in the Hunter Valley. Lock the Gate Alliance. https://www.hunterrenewal.org.au/transforming_mining_land_in_the_hunter_valley

[8] The likelihood that the options will meet opposition from rightsholders, stakeholders, and other groups.

translated into structured criteria and synthesised with quantitative estimations, thereby risking the misrepresentation or oversimplification of participants' views.[9]

In repurposing contexts, decision support tools should not be designed to "close down" debate about options. Instead, they should aim to "open up" deliberation by clarifying similarities and differences among stakeholder perspectives and enabling explicit, transparent comparisons of options. The effectiveness and legitimacy of such processes depend heavily on participant characteristics. Stakeholders' familiarity with decision-support tools, their knowledge of the issue, their attitudes toward the required commitment, their willingness and availability to engage, and existing power dynamics shape the feasibility and quality of the process. Moreover, participatory use of decision tools demands significant resources—including time, funding, access to expert guidance, and skilled facilitation. These practical constraints inevitably condition what can realistically be achieved and must be considered carefully in process design.

Assessment criteria

To assess repurposing options, a clear set of criteria must first be established, followed by the identification of measurable indicators for each criterion. Some indicators can be defined in quantitative terms such as employment generation or capital investment requirements while others may require qualitative assessment, using structured scoring scales (e.g. "high," "medium," or "low"). In cases where qualitative scoring is applied, the methodology and justification for assigning values should be explicit and transparent.

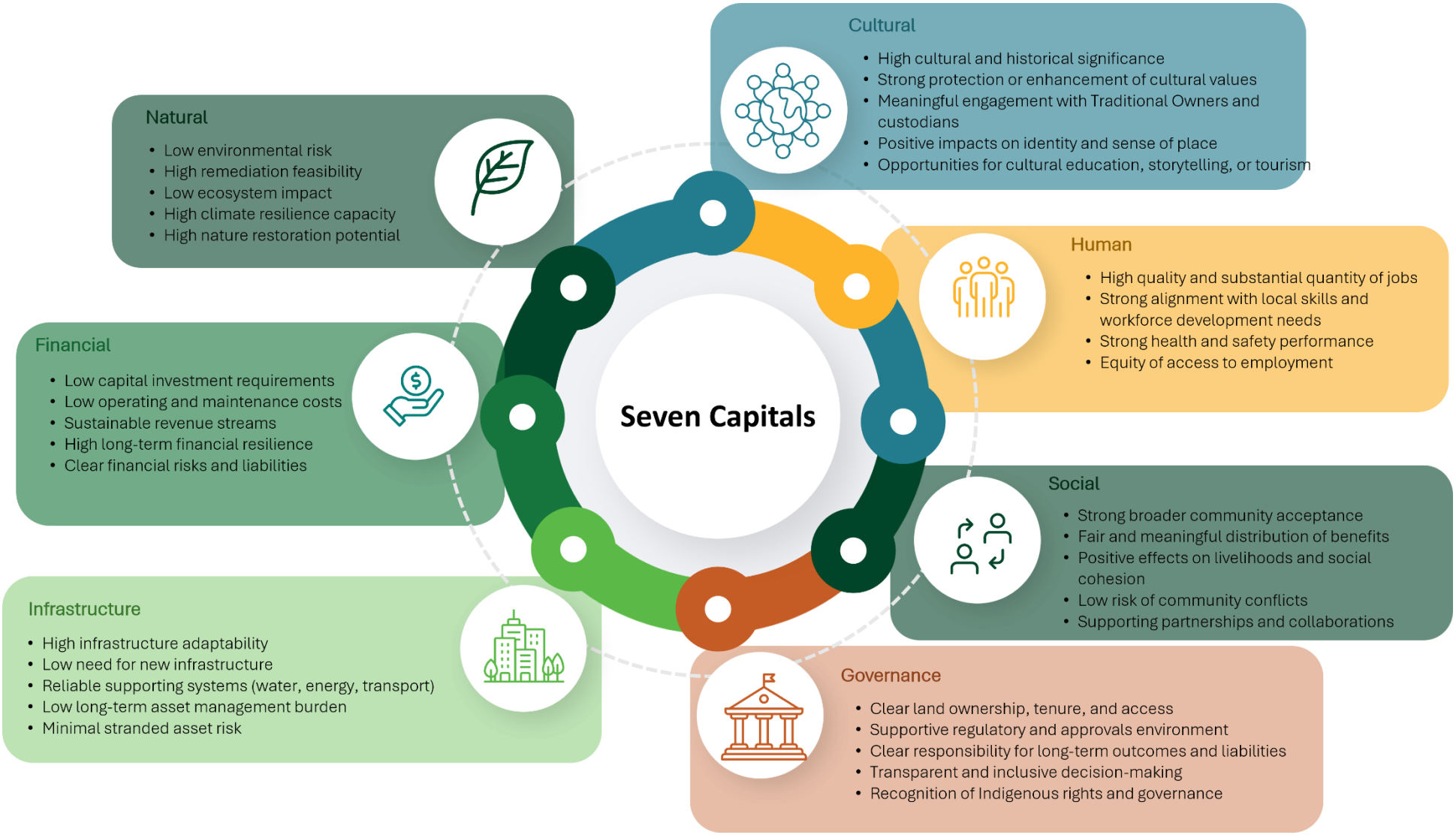
Assessment criteria can be developed through facilitated discussion, building on insights generated in earlier stages of the process. This approach allows participants to reflect on shared values, priorities, and concerns, but it requires sufficient time and careful facilitation to ensure meaningful engagement. Alternatively, a more structured pathway involves presenting a set of conceptual categories that reflect the key considerations and recurring issues in PMLU contexts. These categories can serve as an initial step to guide discussion, helping participants focus on critical dimensions such as economic viability, environmental integrity, social outcomes, cultural values, and governance feasibility while still allowing space to adapt or refine criteria to suit the specific context.

Seven Capitals Framework for participatory mine repurposing

We propose a Seven Capitals Framework encompassing Natural, Human, Social, Infrastructure, Financial, Cultural, and Governance Capital to consider repurposing options (**Error! Reference source not found.**). A defined set of feasible options is evaluated through structured workshops involving rightsholders, stakeholders, and technical experts. For each option, facilitated discussion guided by standardised questions elicits qualitative insights on risks, opportunities, and trade-offs, which are documented alongside the assessment. We have chosen this framework as it systematically supports consideration of the raft of structural and socio-cultural elements in this context, so providing an accessible and inclusive approach to deliberative decision-making.

[9] Dean, M. (2022). "Including multiple perspectives in participatory multi-criteria analysis: A framework for investigation." Evaluation 28 (4): 505–39. https://doi.org/10.1177/13563890221123822.

Figure 4 Seven Capitals for assessing mine repurposing options (Parmenter et al., 2026)



Weighting of Seven Capitals

Weighting, or the relative importance assigned to different criteria, makes explicit the value judgements that underpin how options are compared and prioritised. Importantly, weighting may bring underlying value conflicts and power dynamics to the surface. Decisions about what "matters most" are inherently normative and may reveal competing visions for the future of a site or region.

Therefore, weighting in repurposing contexts should be carefully designed to enhance transparency and support informed deliberation. Simplified criteria-weighting tools can support dialogue and help structure collective judgement. A weighted decision matrix, for example, enables stakeholders to jointly define evaluation criteria and assign relative importance. A pairwise ranking matrix offers a closely related approach, allowing participants to compare criteria directly and clarify their relative priorities. When printed on a large-format poster or displayed on a visible, accessible screen, these matrices can create an accessible tool for collective comparison and reflection. The physical visibility of the matrix reinforces procedural transparency, helping to ensure that the weighting process remains open, inclusive, and collaborative.

Optional scoring

Participants then assign performance scores on a five-point scale (1 = very poor to 5 = excellent) for each capital or criterion, reflecting collective judgement; divergent views are recorded where consensus is not achieved. Scores may be aggregated using equal or stakeholder-defined weightings, with thresholds applied where required, and results interpreted comparatively to assess robustness, sustainability, and long-term stewardship implications, consistent with established deliberative and social MCDA approaches.

Example Participatory Workshop Question Set using Seven Capitals Framework

How to use the following seven capitals questions

- Ask participants to discuss each repurposing option separately and as a collection of options
- Capture answers on sticky notes or digital boards
- After discussion, ask the group to score 1–5 for each question
- Record key risks, conditions, and enablers alongside scores.

Natural Capital – Environment sustainability

1. What level of environmental risk is expected if this option is implemented?
2. What long-term environmental risks remain (e.g. water, contamination, subsidence)?
3. How feasible is remediation for this option, given site conditions?
4. How would this option affect local ecosystems and biodiversity?
5. Does this option improve the site's resilience to climate change and extreme weather?
6. What opportunities exist for nature restoration or nature-based solutions?

Human Capital – People and skills

1. What kinds of jobs would this option create, and for whom?
2. How well does this option align with existing local skills?
3. What retraining or education would be needed?
4. How does this option improve or worsen health, safety and wellbeing outcomes?
5. Does this option build long-term skills and knowledge in the community?
6. Who might be excluded from the benefits of this option?

Social Capital – Community and relationships

1. How acceptable is this option to the local community?
2. How well does this option support inclusive access and benefit sharing?
3. Who benefits most from this option, and who might lose out?
4. How does this option affect local livelihoods and social cohesion?
5. What concerns or conflicts could arise?
6. What partnerships would be needed to make this option work?

Infrastructure Capital – Assets and services

1. What existing infrastructure can be reused or adapted for this option?

2. What new infrastructure would be required?
3. How reliable are energy, water, and transport systems for this option?
4. What are the long-term maintenance and asset management implications?
5. Does this option make efficient use of existing assets or create stranded assets?

Financial Capital – Costs and viability

1. What capital investment is required to make this option viable?
2. What are the ongoing operating and maintenance costs?
3. What revenue streams can this option generate?
4. How financially resilient is this option over the long term?
5. What major financial risks or liabilities could arise?
6. Who carries the financial risk if things go wrong?

Cultural Capital – Heritage, identity, and meaning

1. What cultural or historical values are associated with this site?
2. How does this option protect or enhance those values?
3. Has this option been developed with Traditional Owners and cultural custodians?
4. Does this option strengthen or weaken local identity and sense of place?
5. Are there opportunities for cultural education, storytelling, or tourism?
6. What cultural impacts would be unacceptable?

Governance Capital – Decision-making and trust

1. Who owns the land, and how clear are tenure and access rights?
2. What approvals or regulatory frameworks could support or limit this option?
3. Who is responsible for long-term outcomes and liabilities?
4. How transparent and inclusive would the approval and consultation process be if this option is implemented?
5. In what ways would Indigenous rights, consent, and governance be recognised if this option is implemented??

Closing & integration questions

1. Which selection of options perform best overall, and why?
2. Which capital represents the biggest risk or constraint?
3. What conditions would need to be met before these options are acceptable?
4. What trade-offs are we willing—or not willing—to make?
5. What would success look like for this site in 10, 25, and 50 years?

Optional scoring prompt (during discussion)

"Based on your discussion how would you rate this dimension of capital: low, medium, and high?" *This scoring is intended to support discussion and provide structure to the qualitative results.

Optional scoring prompt (after discussion)

"Based on this discussion, how would you rate this option from 1 (very poor) to 5 (excellent) for this capital?"

Further reading:

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PHASE 4 Project preparation

Step 4.1 Develop a site-specific options package

Objective:

- Inform rightsholders and stakeholders about the engagement process undertaken and key outcomes.
- Develop a site-specific package for the delivery of preferred repurposing option/s.

Outputs

- A brief report outlining the engagement process and key outcomes.
- A package outlining the community-supported repurposing vision, option/s, and key considerations.

Description:

The report presents the outcomes of the participatory mine-repurposing process, including the shared vision, the proposed option(s), key rightsholder and stakeholder considerations for each option, and potential pathways for development and implementation.

The options may be delivered as a package of documents, such as a process report, a prospectus for potential funders and investors, factsheets, visualisations, and relevant data and analysis.

Examples of options documents are “A community blueprint to restore the Hunter” (Hunter Renewal, 2023), “A prospectus for post-mining land uses in the Greater Whitsunday Region” (Reimagine Rehab, 2025), and “A summary report of the Latrobe Collaborative Planning project” (Foran & Reeves, 2026).

The intention of the options document is to provide local and state governments and potential third-party investors with clear guidance on what repurposing options are preferred by rightsholders and stakeholders, noting that social acceptability risk is low. Having this work done and documented upfront would give potential investors confidence in pursuing detailed studies and business case assessments.

Repurposing is a complex endeavour. There are many mechanisms that can support Phase 4 of the process. A recent review of the Queensland context recommended the creation of a “concierge service” within the state government to help proponents of innovative PMLU options to navigate the current regulatory and incentive systems, as well as help identify potential PMLU sites (see EnviroMETS, 2023 “Lighthouse Project 1: PMLU Regulatory and Industry Practice”). This service currently exists in NSW[10] (NSW Resources in Parliament of NSW, 2025, p. 74).

[10] NSW Resources. (2025). In *Beneficial and productive post-mining land use* (Report 53), Standing Committee on State Development, Legislative Assembly, Parliament of New South Wales. Retrieved from https://www.parliament.nsw.gov.au/lcdocs/inquiries/3046/Report%20no.%2053%20-%20State%20Development%20-%20Beneficial%20and%20productive%20post-mining%20land%20use%20-%20FINAL%20Report.pdf

Further reading:

1. Rolfe, J., Everingham, J., Akbar, D., Kinnear, S. & Lechner, A. (2018). C25032: Report 5 - Using workshop processes to generate stakeholder agreement about integrating ex-mine lands into pastoral properties in Central Queensland in Australia. ACARP
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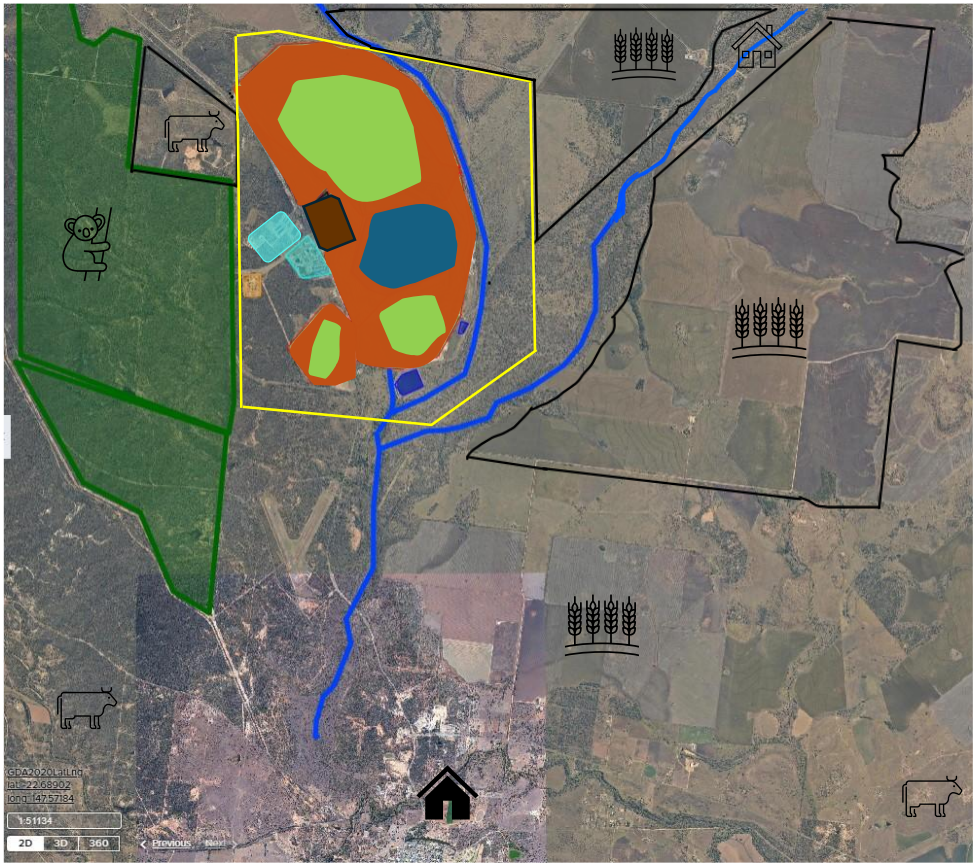
6 Appendices

6.1 Workshop scenario



- Buffer land (company owned)
- Waste rock dump (high slopes)
- Waste rock dump (flat area on top)
- Tailings dam
- Final Void deep void, expect to be saline
- Current mining camp
- Clean water/process water dams
- Infrastructure area - workshop, sewage, water treatment plant, offices
- State Forest, Koala habitat
- Creek diversion and watercourse (ephemeral)
- Mining Lease boundary

Mine
- Open hard rock in central Queensland
- Operated since 2005 – expected to close 2030
- Truck and shovel operation
- Owned and operated by international company

Local and regional level
- Infrastructure inc (rail, road, HV lines, airport)
- Regional centre hub supporting large surrounding area (fuel, waste, supermarket, hospital, school, accommodation etc) – approx. 20,000 people approx. 15km away. 400km to next largest town (major government services)
- Workforce is currently largely FIFO (60%), local (40%)
- Local council is supportive of alternative PMLU opportunities
- State Government have identified opportunities in regional transition plans for infrastructure re-use
- Buffer land is freehold owned by the mining company
- Mining lease is pastoral leasehold
- Native title has been determined on pastoral leasehold and ILUA is in place

Regional land uses
- 3 x solar farms approx. 25-35km away
- New coal mine proposed 10km away
- 4 x existing coal mines are approx. 80km away
- Broad acre cropping
- Grazing including proposed feedlot and abattoir
- Large dam for recreation and water supply
- High tourism area with historic mining and prospecting areas for precious stones

Figure 5 workshop scenario

Thanks to Karin Fogarty for this scenario.

6.2 Workshop outputs

Workshop group activity
Tables were arranged according to the following actors (stakeholder and rights holder groups)

1. Mining companies
2. Indigenous groups
3. Local government
4. Landowners (pastoral, freehold)
5. Community & Civil Society groups (two tables)
6. State government
7. Business.

Some participants acted in their real-life role (the only case for the Indigenous group), and others were required to role play. Each table was asked to imagine they were contributing to the planning of future land use following mine closure, with repurposing identified as a key option of interest. Participants were tasked with creating a visual representation of a process that would enable their sector to effectively contribute to planning for this scenario.

To support this activity, each table was provided with a set of cards, each representing a step in the planning process. These steps were derived from the literature review. Participants were instructed to arrange the cards on butcher's paper in the sequence they believed the steps would occur. Blank cards were also provided so that participants could add any missing steps they felt were important.

The objective of this task was to co-create a shared understanding of the process flow, with the flexibility to revise, add, or remove elements as needed. Each group was given 40 minutes to complete the activity.

Outputs from each group
The following section summarises the outputs by each table/stakeholder group. Overall observations are provided later.

6.2.1 Group 1: Mining company

Mining companies require a comprehensive pre-planning phase before engaging in land repurposing initiatives. This phase should include the following components:

- Stakeholder identification and capability mapping: clearly identify all relevant stakeholders and map their capabilities to ensure a thorough understanding of the engagement framework and the appropriate engagement model.
- Subject matter expert (SME) identification: determine which SMEs are needed early in the process to ensure access to accurate and relevant advice.
- Risk assessment: conduct a full risk assessment, including financial, operational, and reputational risks, along with identifying potential funding sources and mechanisms.
- Financial realism: ensure that the proposed approach is financially viable and sustainable, both during and after implementation.
- Regulatory and legal feasibility: assess the plan against existing regulatory frameworks, including ILUAS (indigenous land use agreements), zoning restrictions, and other legal requirements.
- Executive approval and governance: this pre-planning phase is critical for obtaining senior executive approval, defining the engagement mandate, and establishing boundaries for the development of an engagement plan.

- Historical context: take into account historical land uses, legacy issues, and any prior agreements or obligations.
- Cumulative impact assessment: evaluate the cumulative impacts of the proposed repurposing.

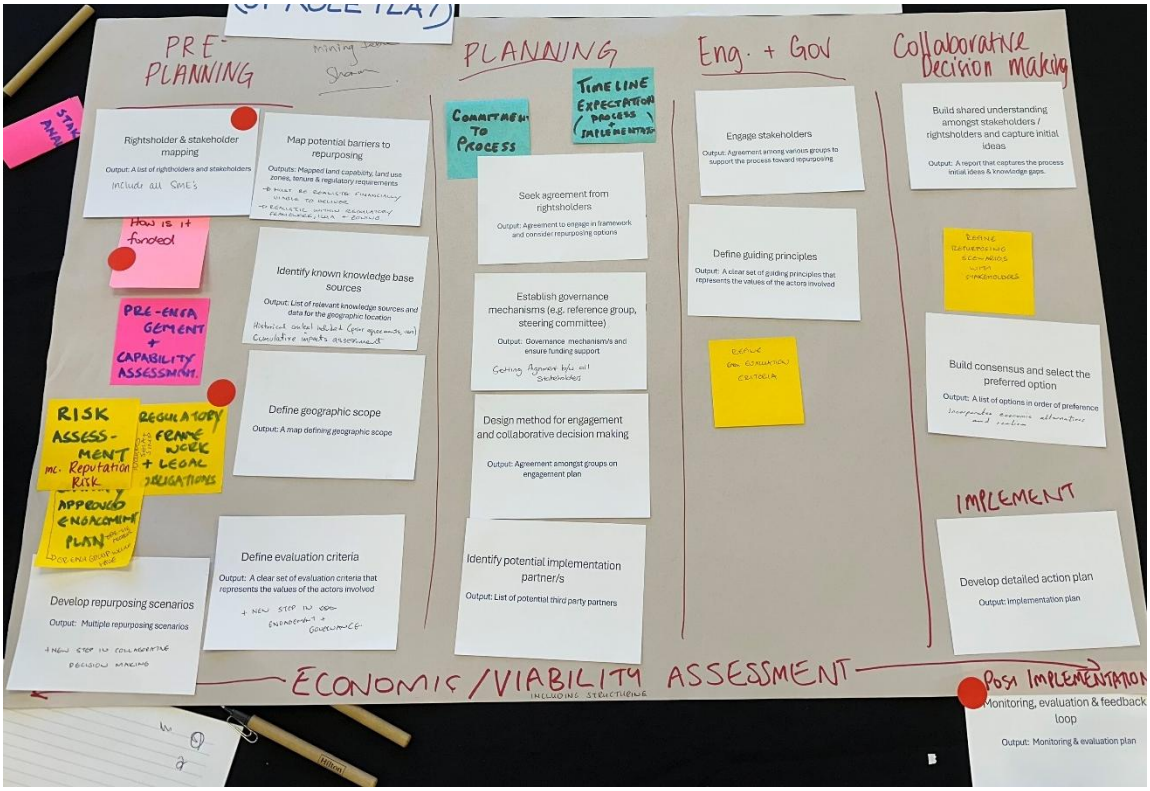


Figure 6 Mining Company Group Output

Key Messages

- Extensive internal work is required before engagement
  Mining companies must undertake significant internal work—including scenario development—*before* seeking senior executive approval for engagement. Without this, no formal engagement process will begin.
- Pre-planning is a non-negotiable step
  Companies will not commit to a repurposing process until this internal pre-planning phase is complete. it forms the foundation for any subsequent planning or consultation.
- Economic viability is essential
  While companies may be open to exploring different repurposing options, all proposals must be economically viable to proceed.
- Engagement is phased and selective
  Rightsholders are not involved during the internal pre-planning phase. Engagement begins in the formal 'planning' stage, starting with rightsholders and then extending to broader stakeholders.
- A clear timeline is needed
  A structured timeline is essential to align internal planning with external engagement, ensuring clarity on when and how stakeholders and rightsholders will be involved.

6.2.2 Group 2: Indigenous groups

The Indigenous Groups Table did not use the cards provided but wrote on butcher's paper under two headings "Planning" and "Engagement'.

What's important in the planning stage?

- Start with boundaries: understand not just legal boundaries (e.g. native title), but also cultural, gendered, and heritage boundaries.
- Acknowledge historical context: consider the impacts of colonisation, intergenerational trauma, and different types of connection to Country (e.g. "born on" vs. ancestral ties).
- Respect Indigenous knowledge systems: include spiritual, cultural, and customary uses of land—both traditional and innovative uses informed by ancient knowledge.
- Environmental protection through Indigenous lenses: embed Indigenous knowledge into risk management, including for natural disasters.
- Recognise multiple layers of knowledge: understand the roles of native title holders, other cultural knowledge holders, and local authorities within Indigenous communities.
- Comprehensive cultural knowledge: incorporate cultural mapping, water sources and flow, species relationships, and cultural sites.

How should Indigenous peoples be engaged?

- Kinship-led decision making: engagement should follow relational, not hierarchical structures; respect Free, Prior and Informed Consent (FPIC) principles.
- Clear Indigenous governance: engagement must recognise and respect existing Indigenous governance systems.
- Relationship before project: building trust and genuine relationships takes time and should not be dictated by project timelines.
- Clarity and transparency: define the scope, funding, and expectations upfront. avoid making promises that can't be kept—engagement must be honest and accountable ("boss to boss").
- Honour Indigenous law and protocols: relationships must be maintained in ways that align with Indigenous Law, including recognising sorry time and law time.
- Move beyond transactional: don't reduce engagement to money—valuing relationships means going beyond financial transactions.
- Challenge unconscious bias: address assumptions that non-Indigenous land tenures (e.g. freehold) have more legitimacy than native title or traditional rights.

Key messages from Indigenous groups:

- Start with Country: understand Native Title and cultural boundaries, including gendered and heritage aspects.
- Acknowledge history: planning must recognise the impacts of colonisation, trauma, and diverse forms of connection to Country.
- Centre Indigenous knowledge: include spiritual, cultural, environmental, and customary knowledge in all planning—both traditional uses and contemporary innovation.
- Recognise layered authority: engagement must account for different roles—native title holders, cultural knowledge holders, and local authorities.
- Build real relationships: trust takes time—engagement must follow Indigenous timelines and protocols, not project deadlines.
- Support kinship-based decision making: respect relational governance structures follow FPIC (Free, Prior and Informed Consent) principles.
- Prioritise clear, respectful governance: engage through transparent, honest, and culturally appropriate decision-making—"boss to boss".

- Value more than money: genuine engagement is not transactional; relationships must be nurtured and honoured.
- Challenge systemic bias: recognise and correct assumptions that non-Indigenous tenure (e.g. pre-native title tenure) overrides traditional rights.

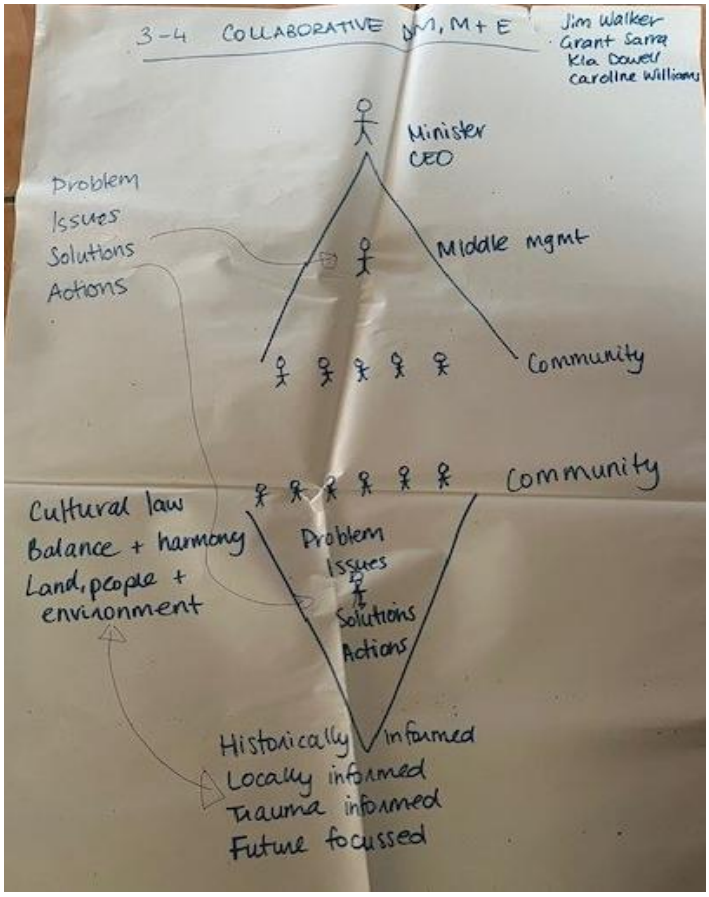


Figure 7 Indigenous Groups Output (1 of 3)

6.2.3 Group 3: Local government

What is important to local government?

- Alignment with regional, local, and state government plans is essential.
- Preference for using existing governance mechanisms rather than creating new structures.
- Want to understand the full asset base, such as through the five capitals model (natural, social, human, financial, and built capital).
- Maintain multiple land use options, ensuring they are compatible and adaptable.
- Repurposing must deliver clear benefits for the local town.
- Rates base implications should be considered early in the planning process.
- Importance of clean air, water, and noise control to support public health and amenity.
- Support for residential land use commitments, especially in the context of future mining operations.
- Economic and community development.
- Repurposing should support local business, create jobs, and contribute to economic growth (no consideration of public amenity and public good?).

- Must consider the impact of population changes (growth or decline) due to workforce fluctuations.
- Need to address potential for social conflict arising from differing values within the community.

Implications of mine closure for local government

- Workforce camps located in towns may become assets or liabilities.
- Need to manage skills transition as the mine workforce evolves or exits.
- Changes in demographic composition can affect services like schools and healthcare.
- Clarity needed on transfer of assets vs. liabilities, particularly around town infrastructure.
- Importance of sustaining social programs and subsidised services.
- Desire to pressure government to mandate residential workforce models for any future mining operations.

Output:

The Local Government Group's process spread across several sheets of butcher's paper. Only one has been provided here.

Key messages from local government:

- Alignment is critical: repurposing plans must align with regional, local, and state planning frameworks.
- Use existing systems: preference for leveraging existing governance mechanisms rather than creating new ones.
- Understand the asset base: a clear picture of economic, social, natural, and physical assets is essential (e.g. five capitals model).
- Flexible land use: multiple compatible land use options should be kept open for future adaptability.
- Local benefit is non-negotiable: outcomes must directly benefit the local town—economically, socially, and environmentally.
- Rates and revenue matter: the impact on the local rates base must be considered in any repurposing proposal.
- Liveability counts: clean air, water, noise control, and amenity are core community priorities.
- Plan for demographic shifts: changes in population, especially due to mine closure or growth, affect schools, services, and infrastructure.
- Manage transition risks: closure planning must address asset transfer, liabilities, workforce skills transition, and service continuity.
- Support local economy: repurposing should stimulate jobs, business growth, and long-term economic resilience.
- Avoid social conflict: engagement must consider differing community values to prevent division or conflict.
- Residential workforce preferred: there is strong local government interest in future mines supporting residential (not FIFO-only) models.

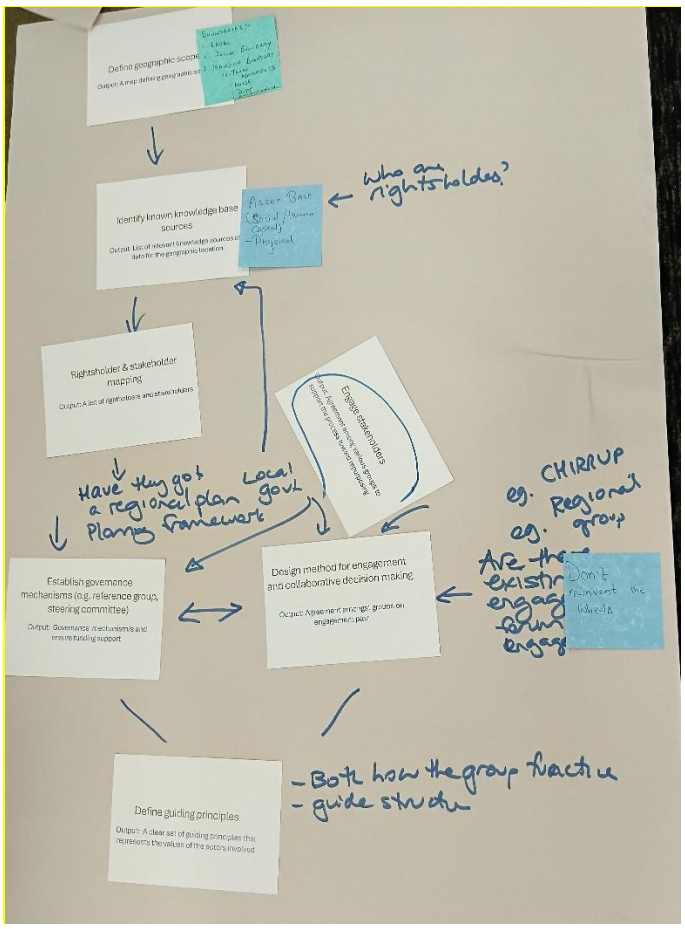


Figure 8 Local Government Group Output (1 of 4)

6.2.4 Group 4: Pastoralists/Landholders

What is important to pastoralists?

- Water is important to them—they seek access for grazing purposes but are highly concerned about salinity, mineral content, and acidity from Acid Mine Drainage (AMD).
- They want transparency regarding the intentions and actions of other parties.
- They need a clear explanation of the rationale behind the new governance process, including how it complements or enhances existing requirements for mining lease relinquishment.
- Stakeholders should be actively engaged throughout the entire process.

Key messages from pastoralists

- This group want early engagement and to understand what is being proposed, who is involved and what their aspirations are. They want to clear rationales for the process and for any new governance mechanism.
- Mapping barriers came later in the process for this group.
- Developing scenarios came after all actors were engaged in the process.

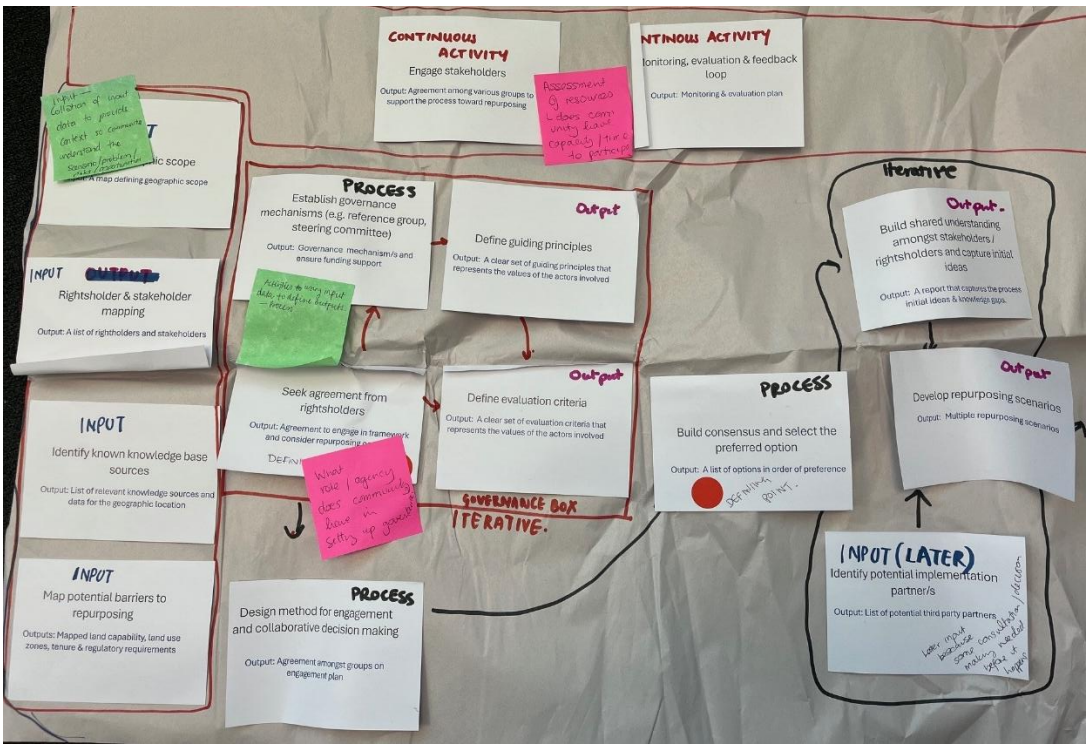


Figure 9 Pastoralists/Landowner Table Output

6.2.5 Group 5 (two tables): Community and Civil Society

Key messages:

- Assess community readiness: Ensure communities have the resources, time, safety, and support needed to participate meaningfully.
- Enable meaningful input: Provide clear ways for communities to contribute to identifying scenarios, risks, and opportunities.
- Clarify governance role: Define the community's role in governance and uphold their agency throughout the process.
- Tailor engagement: Engage different community groups separately to allow open sharing without pressure or power imbalances.
- Provide context: Collate and communicate data clearly so communities understand the issues and can engage effectively.
- Build consensus thoughtfully: Aim to find common ground rather than force agreement (i.e. engage facilitation expertise).
- Include young people: Actively involve youth in planning as future stakeholders with valuable perspectives.

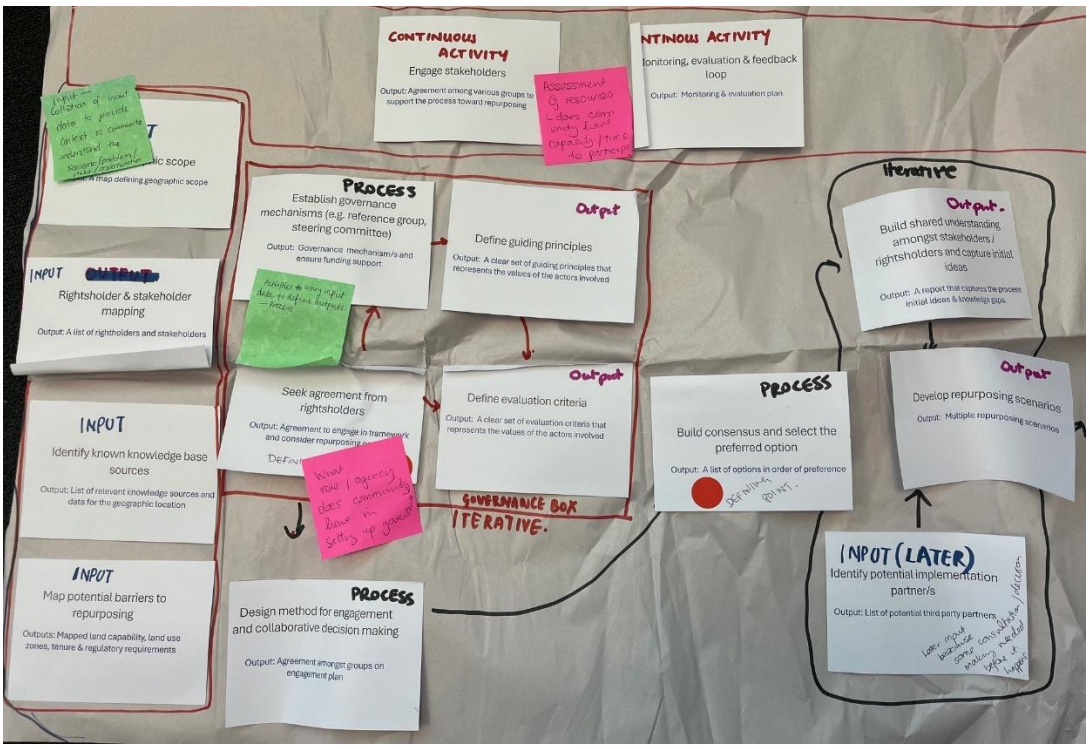


Figure 10 Community and Civil Society no. 1 Output

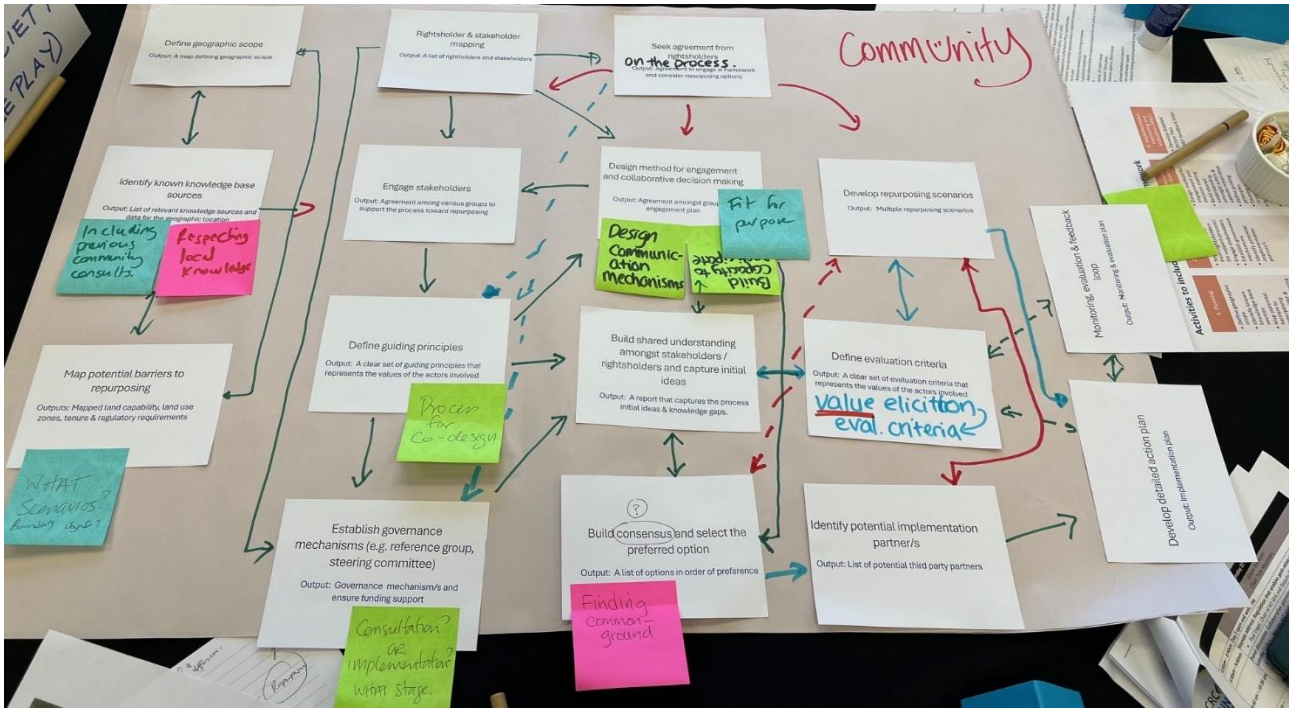


Figure 11 Community and Civil Society no.2 Output

6.2.6 Group 6: State Government

Key messages:

- Understand interests and risk appetite: Identify the goals, values, priorities and risk appetite of key rightsholders and stakeholders to build alignment and respect.

- Build on existing processes: Consider repurposing existing closure, rehabilitation and engagement processes rather than creating a new framework, while broadening participation to include rightsholders and stakeholders.
- Establish clear governance: Create an internal government steering group to coordinate and oversee the process, with clear roles, responsibilities and decision-making authority.
- Engage rightsholders throughout: Involve rightsholders at multiple stages, including First Nations groups, with ongoing opportunities for consent, input and feedback.
- Consider the whole context: Assess the site alongside regional plans, housing, the economy, employment, investment, training, land and water rights, tenure and regulatory requirements.
- Respect culture, history and knowledge: Recognise the history of the region, including dispossession and other harms, and bring Indigenous and Western knowledge and ways of working together in the process.
- Make participation accessible: Keep the process proportionate and practical, reduce barriers to participation, and ensure smaller and non-corporate organisations can participate effectively.
- Be realistic about outcomes: Clearly communicate viability, funding, constraints and potential benefits to avoid raising expectations that cannot be met. Capture both preferred and non-preferred options transparently.
- Government's role: Government should facilitate, incentivise and regulate the participatory process, help shape viable outcomes, and remove barriers to participation.

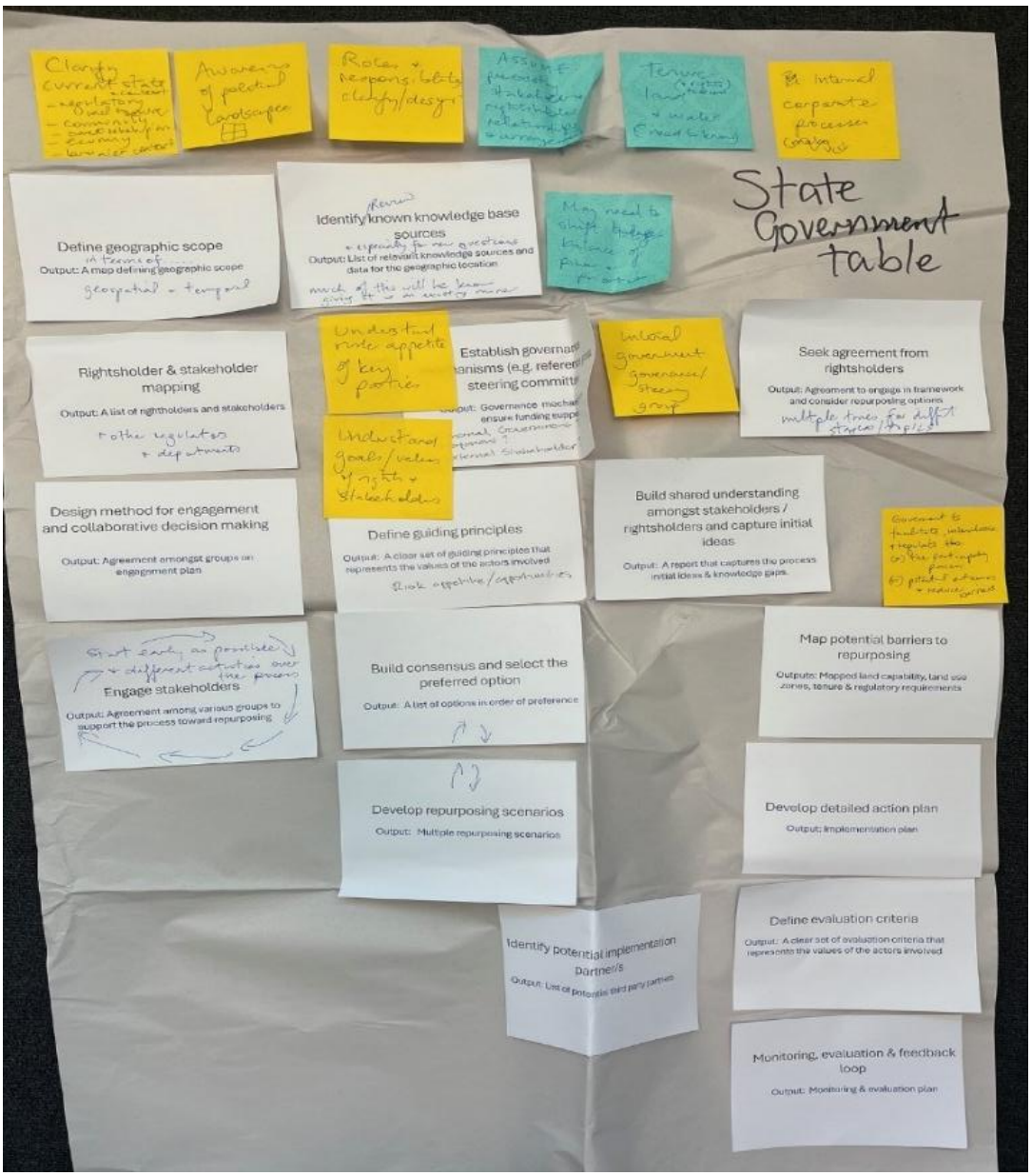


Figure 12 State Government Group Output

6.2.7 Group 7: Business

Key messages:

- A clear understanding of the regional context and future plans is essential for informed decision-making.
- There is a desire to leverage existing investments made by mining companies to support long-term regional development.
- Involving young people in planning processes is important to build future capacity and ensure generational continuity.
- Businesses are interested in identifying market opportunities and strategies to retain people in the region.
- A strong business case for future economic opportunities is needed to attract and sustain investment.

- Access to funding is a key concern—businesses want to know who is willing to invest and are keen to engage with other sectors.
- Educating the community about funding processes and opportunities is seen as vital for informed participation and shared success.

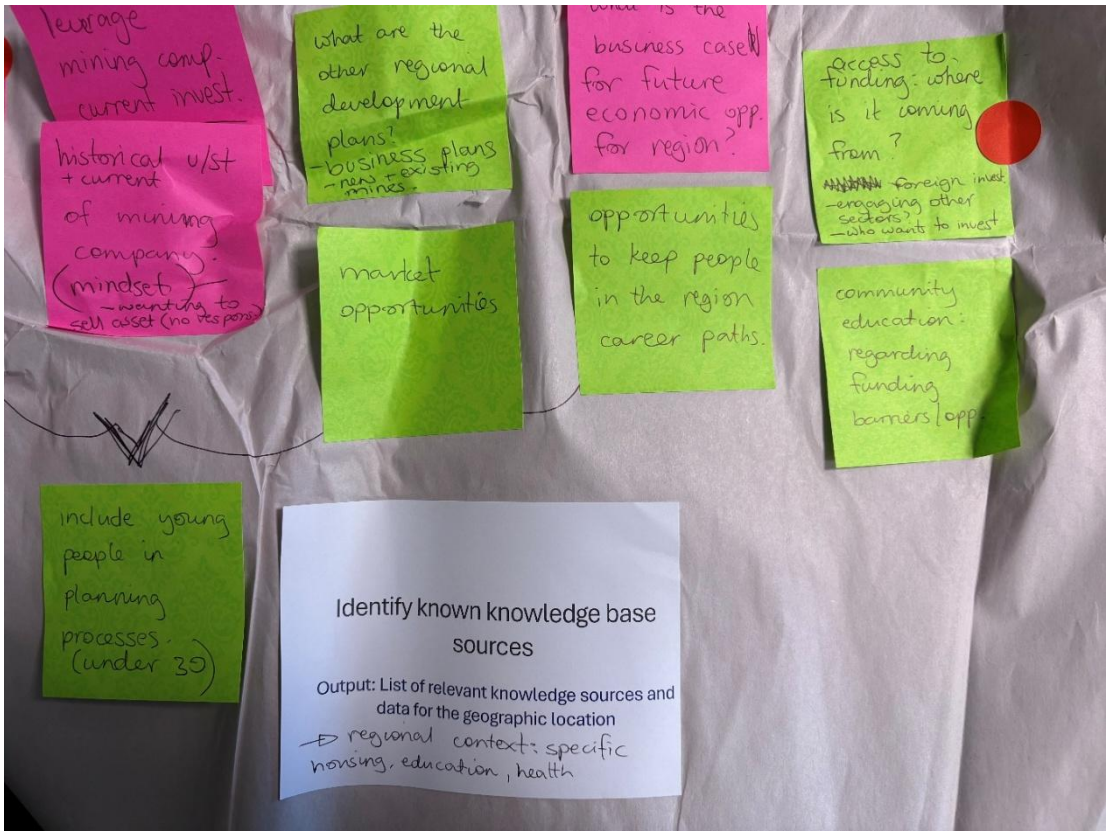


Figure 13 Business Group Output (1of 1).

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Australian Government Department of Industry, Science and Resources

Cooperative Research Centres Program

This project is supported by the Australian Government Department of Industry, Science and Resources through the Cooperative Research Centre for Transformations in Mining Economies.