

# Regional Cumulative Effects Assessment and Management (RCEAM) for mining transitions

*19 February 2026*



# ***Welcome!***

**Kiesha Blaser**

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**@IAIANetwork**

**#iaiawebinar**



✓ **Webinars on demand:**

- **Part 1 RCEAM:** explores how regions can assess and manage cumulative mining impacts across multiple operations and development stages.
- **Digital IA: Perspectives on the use of AI in IA:** explores the growing role of AI in the impact assessment process

✓ **Upcoming events:**

- IAIA26 annual conference in Québec City, Canada **19-22 May**
- **Online training courses:**
  - *Leadership in ESIA | 9-12 March*
  - *IAP2's Fundamentals of Public Participation | 7-10 April*
  - *Involuntary Resettlement Planning, Livelihood Restoration, and SIA | 28-30 April 5-7 May*

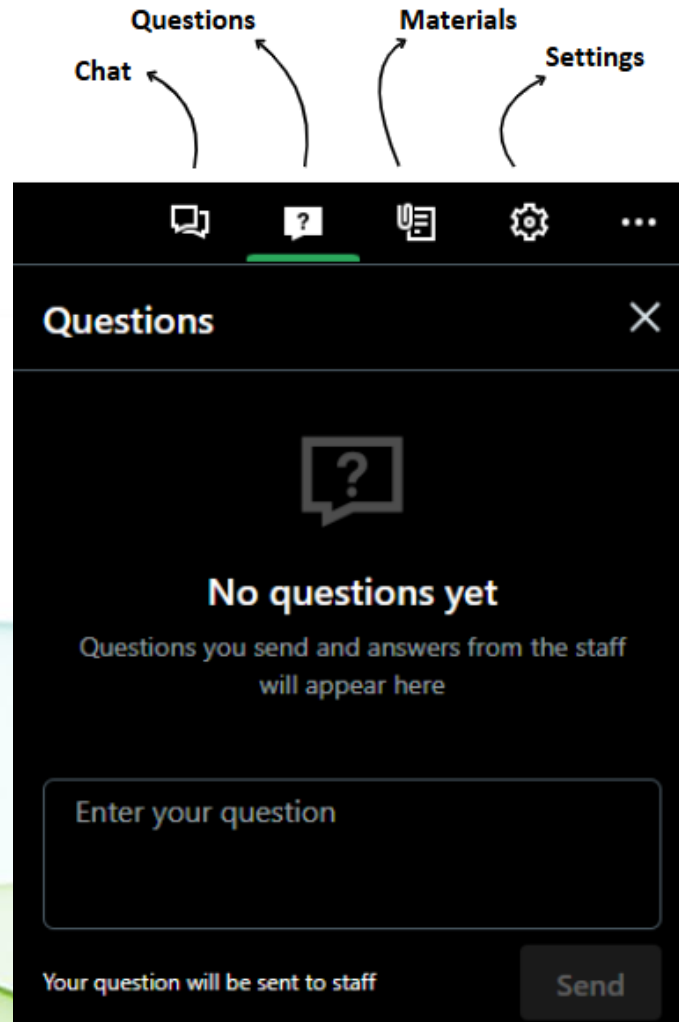
✓ **On-demand training** on Strategic Environmental Assessment (Foundations, Decision-Makers, and various renewable energy sector courses)

✓ **Online training and mentorship** through the Professional Development Program

✓ **Free downloadable publications**, like Best Practice Principles, IA FasTips, and more

*Find these resources and more at*  
**[www.iaia.org](http://www.iaia.org)**

# Housekeeping



✓ Recording?

✓ Questions?

✓ Slides available?

# Regional Cumulative Effects Assessment and Management (RCEAM) for mining transitions

## *Presenters*

**Jenny Pope**

Murdoch University & Integral  
Sustainability

**Monica Maharjan**

Murdoch University

**Will Rifkin**

University of  
Newcastle

**Jessica Reeves**

Federation University

# IAIA WEBINAR PART 2

18/19 Feb 2026



## Regional Cumulative Effects Assessment and Management (RCEAM) for Mining Transitions - Part 2

# Presenters



**Prof. Jenny Pope**  
(Murdoch Uni)

Jenny Pope is Adjunct Professor of Sustainability in Mining at Murdoch University, Fellow of the University of Cambridge Institute for Sustainability Leadership, and Director of consulting firm Integral Sustainability. She is a former member of the WA Environmental Protection Authority and an internationally recognised researcher of impact assessment. She co-led the Stage one project with Renee Young.



**A/Prof. Raquel Tardin-Coelho** (Curtin Uni)

Raquel is an Associate Professor with the Curtin Institute for Energy Transition and an expert member of the ICOMOS-IFLA International Scientific Committee on Cultural Landscapes – UNESCO. She has significant experience in Integrated Planning and Design, grounded in cultural and natural landscape preservation, conservation, and regeneration. Her work focuses on NatureCulture systems to develop solutions that achieve sustainable, resilient realities by engaging local people (especially traditional communities) and providing evidence for stakeholders' dialogue. Raquel has collaborated with Indigenous Australian communities in Western Australia on projects such as cultural landscape values mapping, Indigenous participatory action research, and Indigenous-led Regional Cumulative Effects Assessment and Management. Her professional experience in Australia, Europe, Latin America, and Asia provides her with a solid foundation for addressing national and international issues from a multicultural perspective.



**Emeritus Prof. Will Rifkin** (Uni of Newcastle, IAIA member)

Professor Emeritus Will Rifkin is a sociologist and applied regional economist from the University of Newcastle, Australia. He has been developing methods for fostering more widespread understanding of social and economic impacts to help guide local and regional change. He led creation of the Boomtown Indicators to help address community impacts of development of onshore natural gas resources and has assessed community concerns about waste-to-energy facilities. He is facilitating collaboration to grow the circular economy outside urban centres and connecting academics who address the approaching closure of coal mines and power stations in rural Australia.



**A/Prof. Jessica Reeves** (Federation Uni)

Dr Jess Reeves is a place-based sustainability science researcher. With a background in geology, she is passionate about the interplay between humans and their environment through time – including recent industrial pollution and long-term human modification of landscapes. She is particularly interested in elevating community voices around environmental stewardship, incorporating multiple ways of knowing place. She teaches and conducts research at the Gippsland Campus of Federation University Australia, facilitating community engagement in the Gippsland region to identify preferred options for post-mining land use.



**Dr Monica Maharjan**  
(Murdoch Uni)

Dr Monica Maharjan is a research fellow at the Harry Butler Institute at Murdoch University in Perth, Australia. Prior to completing her PhD, she gained masters degrees in water resources management and in climate change. She has been affiliated with the Nepal Development Research Institute and Nepal Engineering College- Centre for Postgraduate Studies.

# Regional Cumulative Effects Assessment and Management (RCEAM) for Mining Transitions

## Recap of Basics of RCEAM

IAIA Webinar Part 2 | Jenny Pope | 18/19 Feb 2026





## Acknowledgment of Country

CRC TiME acknowledges Traditional Custodians throughout Australia and their continuing connections to their lands, waters and communities.

We pay our respects to all First Nations peoples and communities, and to Elders past and present.

Artwork by **Acacia Collard**.

# Cooperative Research Centre for Transformations in Mining Economies (CRC TiME)

## VISION

Post-mine transitions are valued and enabled to create enduring benefit for all Australians.

## MISSION

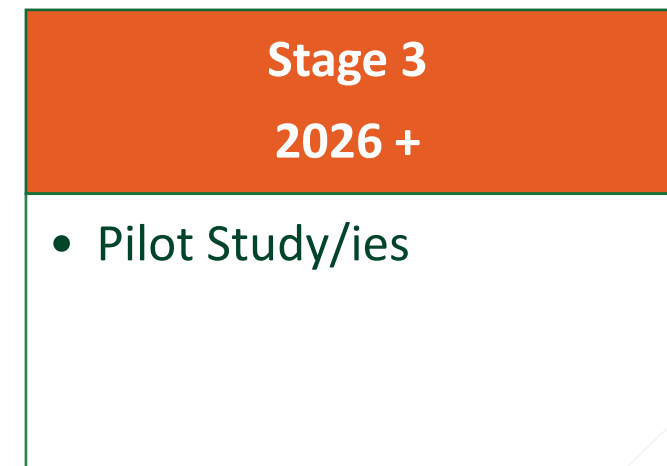
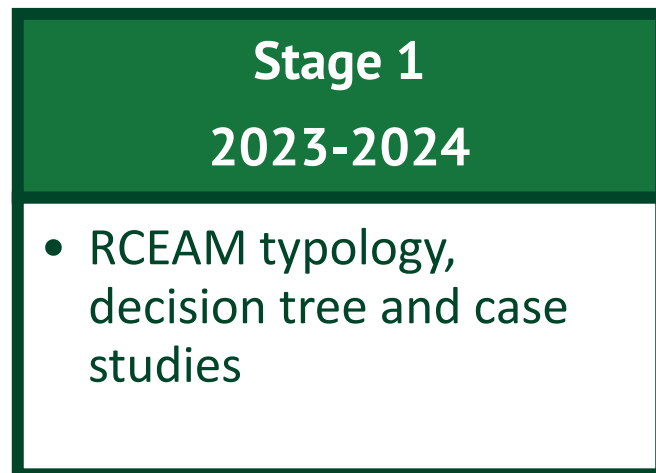
Bringing together diverse stakeholders to help reimagine and transform mine closure and post-mine transitions.



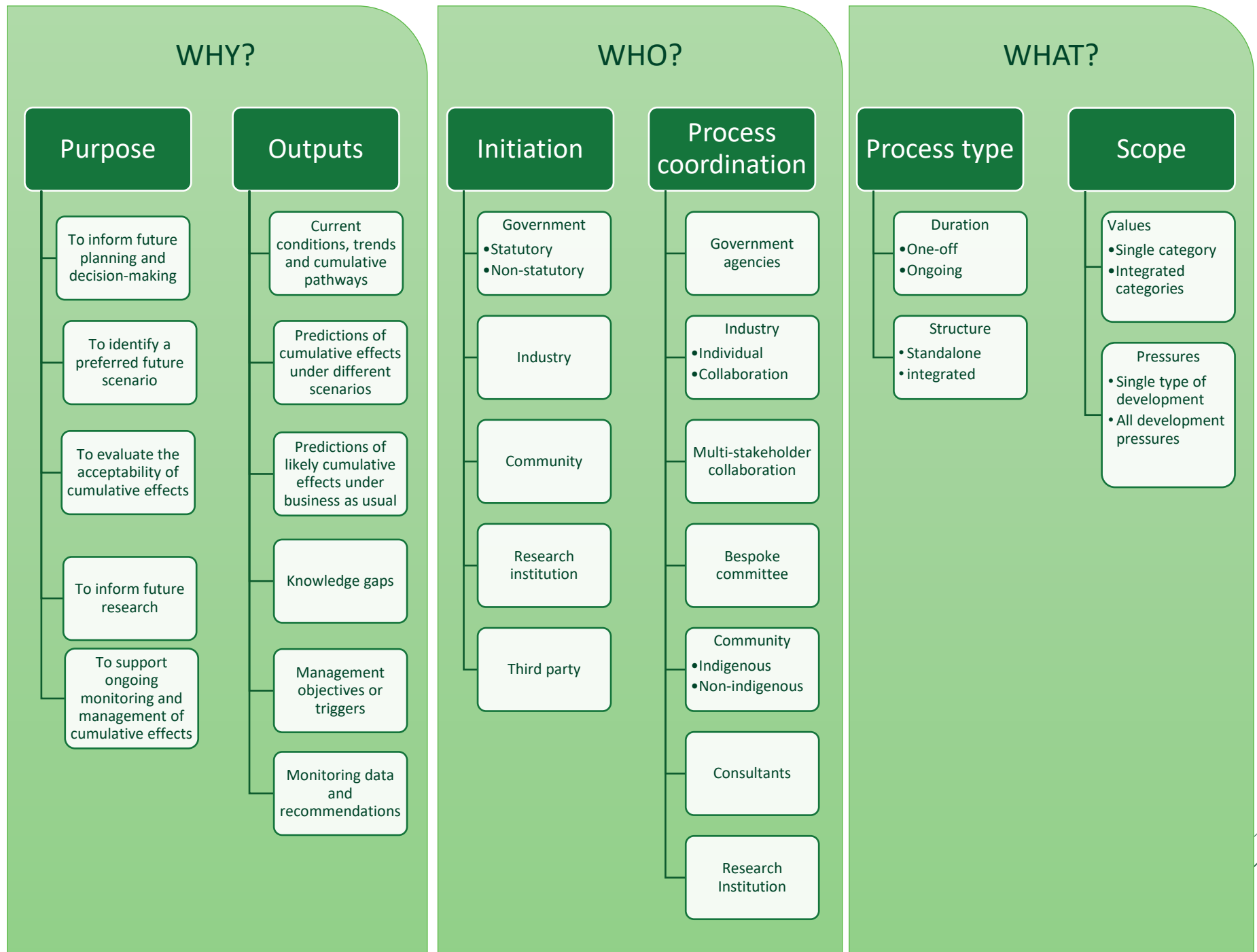
- PROGRAM 1: Regional Economic Development
- PROGRAM 2: Risk, Evaluation and Planning
- PROGRAM 3: Operational Solutions
- PROGRAM 4: Data Integration, Forecasting and Scale

# Project 4.7 Regional Cumulative Effects Assessment and Management (RCEAM) to Support Transitions in Mining Economies

- CRC TiME Impact Objective 1: Mines are closed in ways that deliver social, economic and environmental value
- CRC TiME Impact Objective 5: Policy, decision and management systems reduce risks across stakeholders.
- The overall project aims to develop process-based methodology, guidance documents, and governance model for undertaking RCEA that can consistently be applied across Australia to inform transitions in mining economies at a regional scale.



# Proposed RCEAM Typology





<https://www.forrester.com/blogs/three-tips-for-planning-next-years-product-roadmap/>

# A Systematic Approach to Regional Cumulative Effects Assessment and Management (RCEAM) to Support Transitions in Mining Economies Stage 2: Developing Capacity

## Stages of Assessment in RCEAM & Categories of Tools

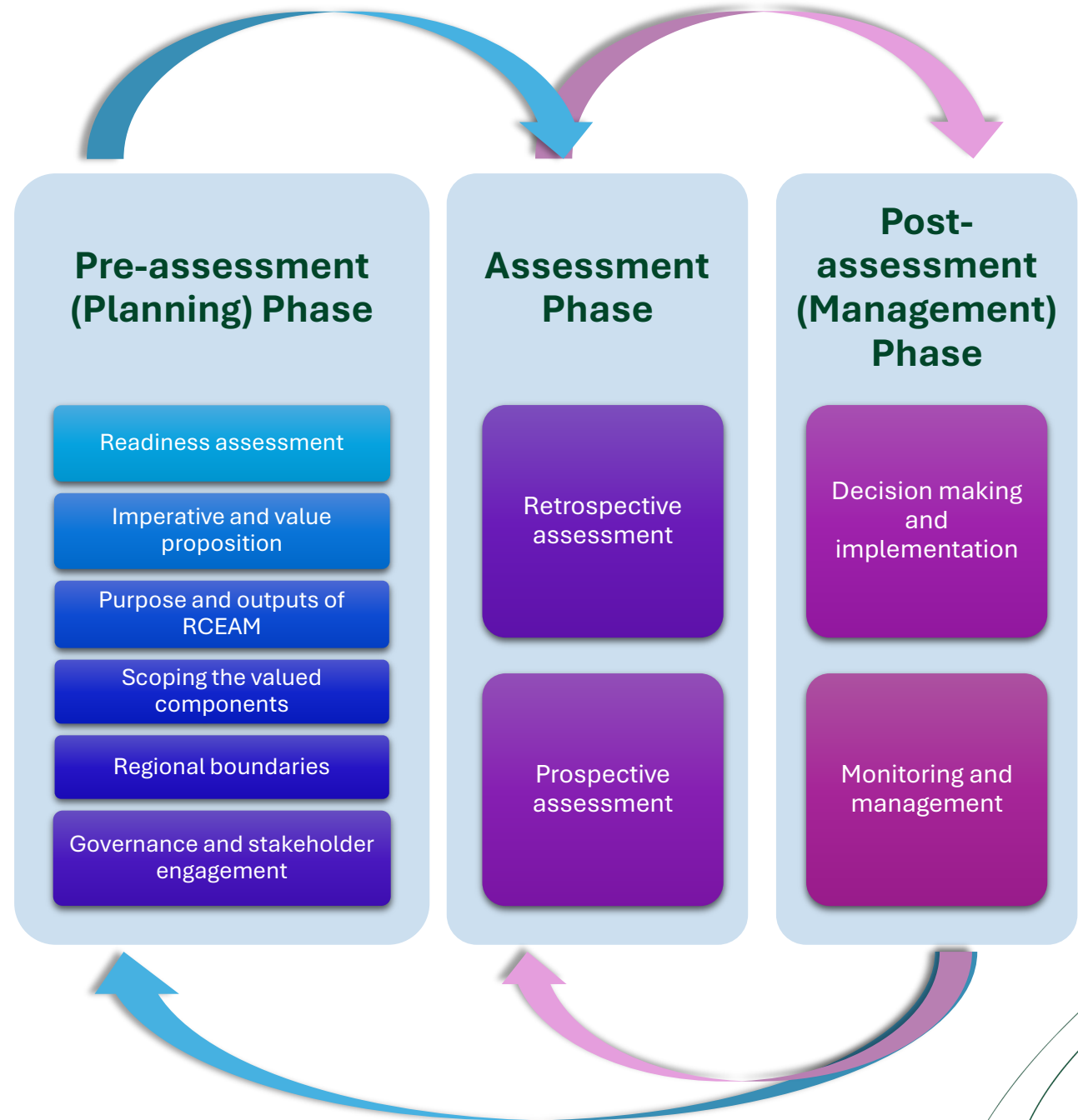
IAIA Webinar Part 2 | Monica Maharjan | 18/19 Feb 2026

Research Fellow, Murdoch University



# RCEAM Process Roadmap

- Regions could be at Pre-assessment or Assessment phase
- One-off
- Ongoing



# RCEAM Process Roadmap



## Pre-assessment phase

- Planning phase
  - Imperative and value proposition
  - Deciding valued components and regional boundaries
- Readiness assessment
  - Collective impact
- Collaborative approach



## Pre-assessment (Planning) Phase

Readiness assessment

Imperative and value proposition

Purpose and outputs of RCEAM

Scoping the valued components

Regional boundaries

Governance and stakeholder engagement

# RCEAM Process Roadmap



## Assessment phase

- Retrospective assessment
  - Help understand accumulated impacts
  - Past and current effects
    - Spatial and Analytical tools
- Prospective assessment (Future effects)
  - Enables strategic regional planning
  - Modelling tools



## Assessment Phase

Retrospective assessment

Prospective assessment

# RCEAM Process Roadmap



## Post-assessment phase

- Decision making and implementation
- Monitoring and Management
  - Collaborative tools



## Post-assessment (Management) Phase

Decision making  
and  
implementation

Monitoring and  
management

# Selected tools in RCEAM Toolkit



<b>1</b>	<b>Geographical Information System (GIS)</b>	
<b>2</b>	<b>Remote sensing</b>	<b>Spatial</b>
<b>3</b>	<b>Marxan</b>	
<b>4</b>	<b>ALCES</b>	
<hr/>		
5	Readiness assessment tools	
6	Town Transition Tool	
7	Natural Capital Accounting (NCA)	
<b>8</b>	<b>Multi-criteria Decision Making (MCDM)</b>	<b>Analytical</b>
9	Pressure, State and Response (PSR) Framework	
10	Risk Assessment Framework for Cumulative Effects (RAFCE)	
11	Shared Analytical Framework for the Environment (SAFE)	
12	Regional Report Card	
<hr/>		
<b>13</b>	<b>Conceptual modelling</b>	
<b>14</b>	<b>Landscape connectivity model</b>	<b>Modelling</b>
<b>15</b>	<b>Hydrological modelling</b>	
<b>16</b>	<b>Sediment modelling</b>	
<hr/>		
17	Participatory spatial method	
<b>18</b>	<b>Delphi</b>	<b>Participatory</b>
<hr/>		
19	Collaborative regional PMLU suitability assessment	
<b>20</b>	<b>Community-based monitoring</b>	<b>Collaborative</b>

# Categories within toolkit



CATEGORY	METHODS	RCEAM STAGES (PLANNING <sup>1</sup> , ASSESSING <sup>2</sup> AND MANAGING <sup>3</sup> )	VALUED COMPONENTS
<b>Spatial</b>	Geographical Information System (GIS)	1, 2 and 3	Environmental, Cultural and Economic
	Remote sensing	1, 2 and 3	Environmental
	Marxan	2 and 3	Environmental
	ALCES	1, 2 and 3	Environmental
<b>Analytical</b>	Readiness assessment tools	1	Environmental, Social, Cultural and Economic
	Town Transition Tool	1 and 3	Environmental, Social, Cultural and Economic
	Natural Capital Accounting (NCA)	1, 2, 3	Environmental
	Multi-criteria Decision Making (MCDM)	1, 2 and 3	Environmental, Social, Cultural and Economic
	Pressure, State and Response (PSR) Framework	1 and 2	Environmental, Social, Cultural and Economic
	Risk Assessment Framework for Cumulative Effects (RAFCE)	1, 2 and 3	Environmental, Social, Cultural and Economic
	Shared Analytical Framework for the Environment (SAFE)	1, 2 and 3	Environmental, Social, Cultural and Economic
	Regional Report Card	2 and 3	Environmental, Social, Cultural and Economic
<b>Modelling</b>	Conceptual modelling	1, 2 and 3	Environmental, Social, Cultural and Economic
	Landscape connectivity model	2 and 3	Environmental
	Hydrological modelling	2 and 3	Environmental, Social, Cultural and Economic
	Sediment modelling	2 and 3	Environmental
	Participatory spatial method	1, 2 and 3	Environmental, Social and Cultural
<b>Participatory</b>	Delphi	2 and 3	Environmental, Social, Cultural and Economic
	Collaborative regional PMLU suitability assessment	1, 2 and 3	Environmental, Social, Cultural and Economic
<b>Collaborative</b>	Community-based monitoring	1, 2 and 3	Environmental

# Key findings

## Roadmap

- Costly if purpose not clearly defined from the onset
- Collaboration is the key
  - Data sharing ecosystem not well-developed
- Broader national uptake of coherent RCEAM is a challenge
  - Social effects assessments lack well-defined legislative basis
  - Project-specific approaches

## Toolkit

- Limited utility for isolated disciplinary application
- Relevance increases in collaborative contexts
- Toolkit can evolve
  - Future additions to the toolkit
  - More robust modelling tools
  - Tools to integrate Western Science and Traditional Knowledge

# Recommendations

## Roadmap

- Design by considering regional differences
- Secure funding sources at planning phase
- Importance of individual champions
- Data sharing needs legislative mandate

## Toolkit

- Making it widely accessible
- Online knowledge base and interactive resources
- Tailored training programs and knowledge-sharing sessions



[https://mine.nridigital.com/mine\\_australia\\_jan25/queensland\\_s\\_mines\\_minister\\_promises\\_to\\_restore\\_confidence\\_in\\_the\\_mining\\_sector](https://mine.nridigital.com/mine_australia_jan25/queensland_s_mines_minister_promises_to_restore_confidence_in_the_mining_sector)

# A Systematic Approach to Regional Cumulative Effects Assessment and Management (RCEAM) to Support Transitions in Mining Economies Stage 2: Developing Capacity

## Models of Governance for RCEAM

IAIA Webinar Part 2 | Will Rifkin | 18/19 Feb 2026

Emeritus Professor, U of Newcastle, Australia



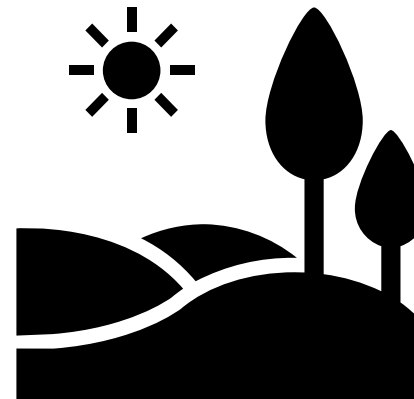
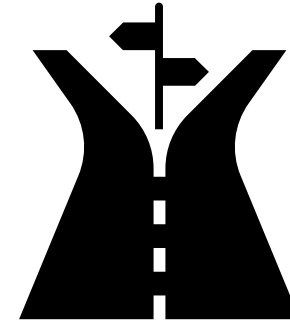
# Governance: ‘Who is in charge?’

## Options for Australian context -

1. Lead agency extends its remit to regional focus
2. Establish a new authority
3. Voluntary collaboration among diverse interests

## Examples are revealing

- Mining and mined-land rehabilitation – e.g., Latrobe Valley
- River basins in US, e.g., CALFED
- Great Barrier Reef Marine Park Authority
- Queensland Office of Groundwater Impact Assessment



# Governance: 'Who is in charge?' (*cont.*)

## The promise

- Coordinated regional view and decision-making

## The perils

- Case analyses suggest industry reluctance for 'collaborative governance' – more cost, more complexity, more uncertainty

## The task

- We know what to try, but how do we start? Next steps?
- Particularly when you are not in charge

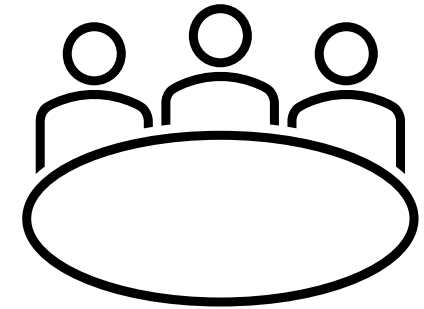
# Your experiences with some aspects ...

## 1. Buy in:

- Areas of common focus, commitment over time, investment, ... incorporation

## 2. Structure:

- Steering committees represent stakeholder organisations from industry, government, NGOs, First Nations, community
- Expert committees involve specific types of specialists, e.g., water, vegetation, cultural impacts, socioeconomic impacts



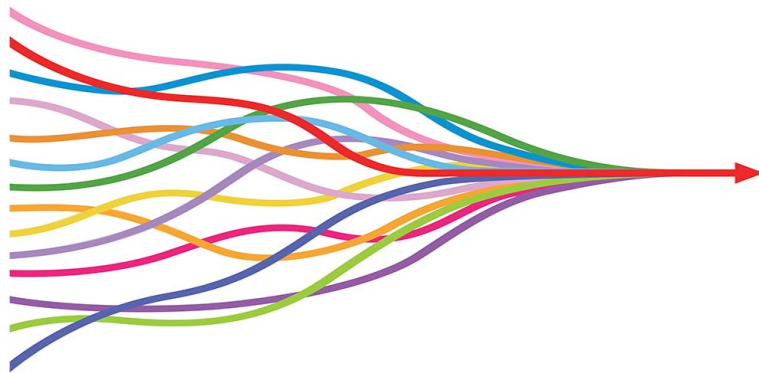
# Your experiences with some aspects ... (*cont.*)

## 3. Alignment:

- Vision, annual agenda, projects, 'deliberate speed'
- Accountability mechanisms
- Collaborative projects made up of elements of partners' existing projects\*

## 4. Change agents:

- as 'intermediaries' doing 'meta-governance' ...



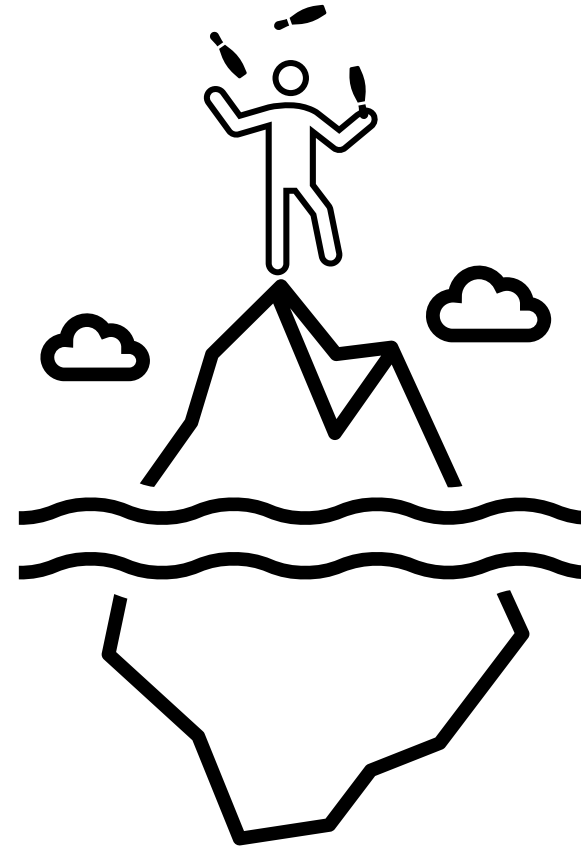
- \*See elements of 'collective impact' –
1. Common agenda
  2. Shared measurement
  3. Mutually reinforcing activities
  4. Continuous communication
  5. Backbone support organisation

# Realisations from research & consultation

Ideal	Real
Clean slate	Operating sites
Open-minded / trusting stakeholders	Existing relationships (+/-)
Coherence <i>within</i> each organisation	Differences of opinion <i>within</i> organisations
Integration across environmental, social, economic, cultural	Start with <i>some</i> disciplines, e.g., water, vegetation
'Planning' orientation exploring possibilities	'Regulatory' orientation facing a roadblock / opportunity

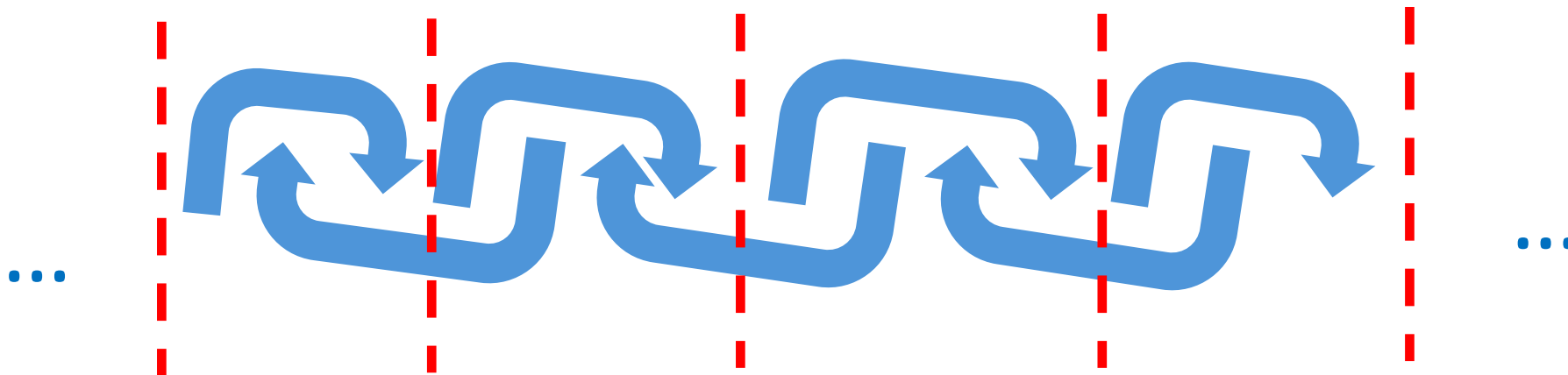
# Key findings

- **Complexity** of RCEAM governance:
  - historical relationships among organisations
  - evolving changes in context
  - shifts in key personnel
- **Diversity** of approaches that might work:
  - *102 Things* examples
  - Indigenous-led strategies in Canada
  - your own experiences ...



## Key findings (*cont.*)


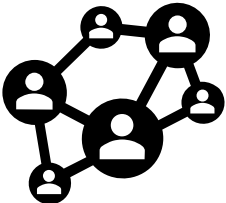
- **Timeframe** – decade, not months
- **Options** – government agency, independent government authority, collaborative governance – can be seen as phases\*  
(\*depends on where **champions** reside & what legislation supports)

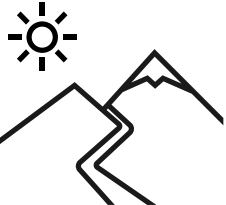


# Summary

1. Build on **existing** collaboration / cooperation

2. Assess '**readiness**' of potential partners

3.  (environ.) +  (social, cultural, economic) ???

4.  → **RCEAM** (in current setting in each location)



<https://www.australianmining.com.au/efficient-cooling-solutions-for-a-major-mining-project/>

# A Systematic Approach to Regional Cumulative Effects Assessment and Management (RCEAM) to Support Transitions in Mining Economies Stage 2: Developing Capacity

## Readiness and Next Steps

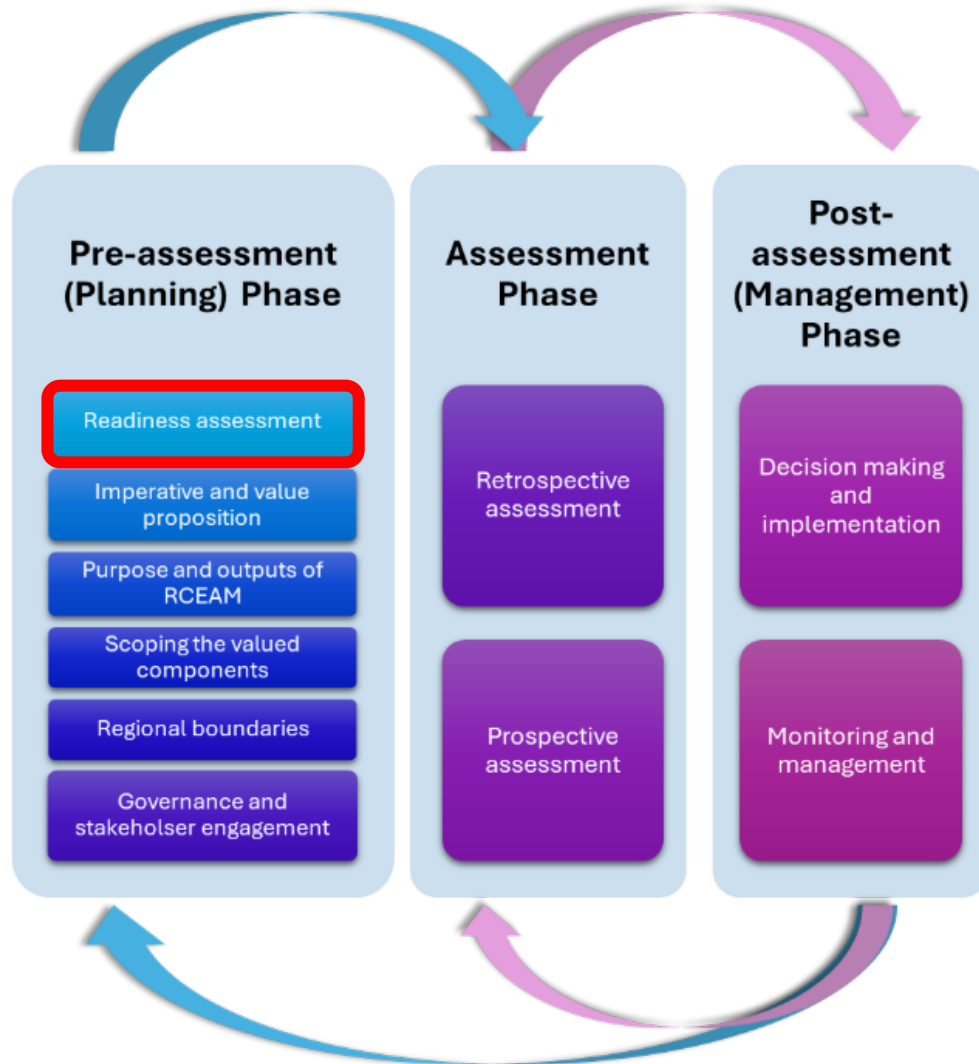
IAIA Webinar Part 2 | Jessica Reeves | 18/19 Feb 2026

[j.reeves@federation.edu.au](mailto:j.reeves@federation.edu.au)

Future Regions Research Centre, Federation University Australia

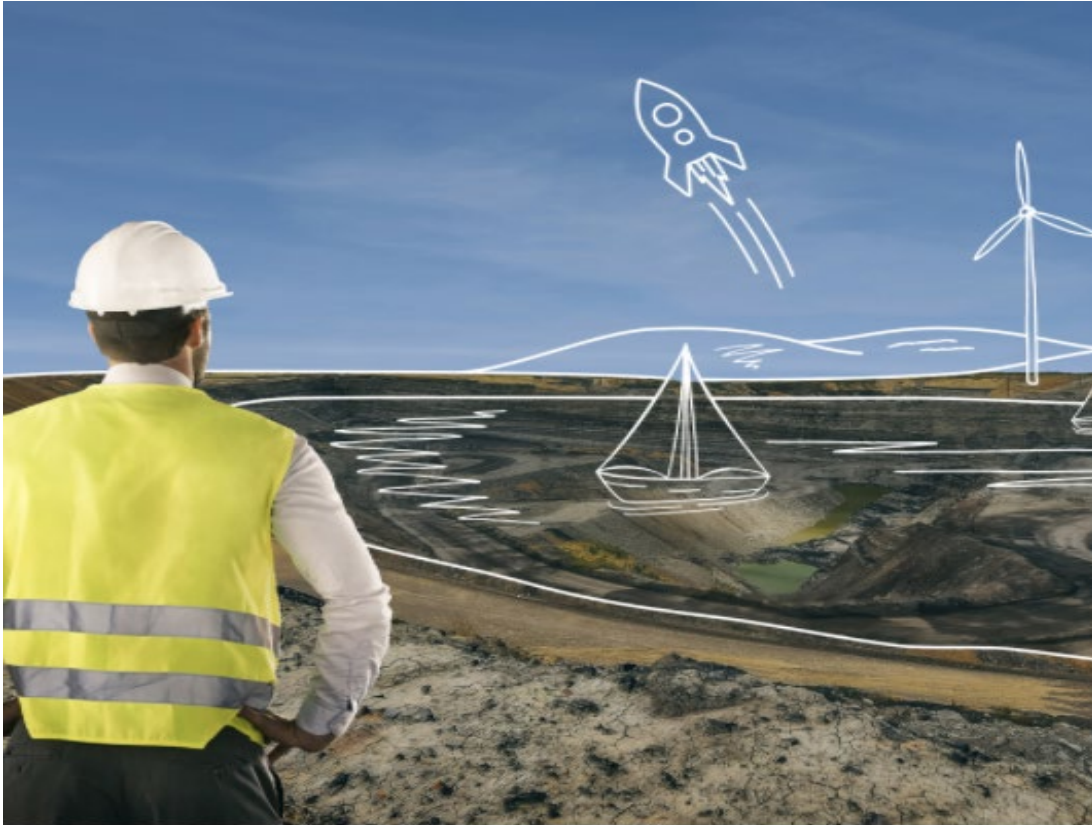


# Readiness Assessment



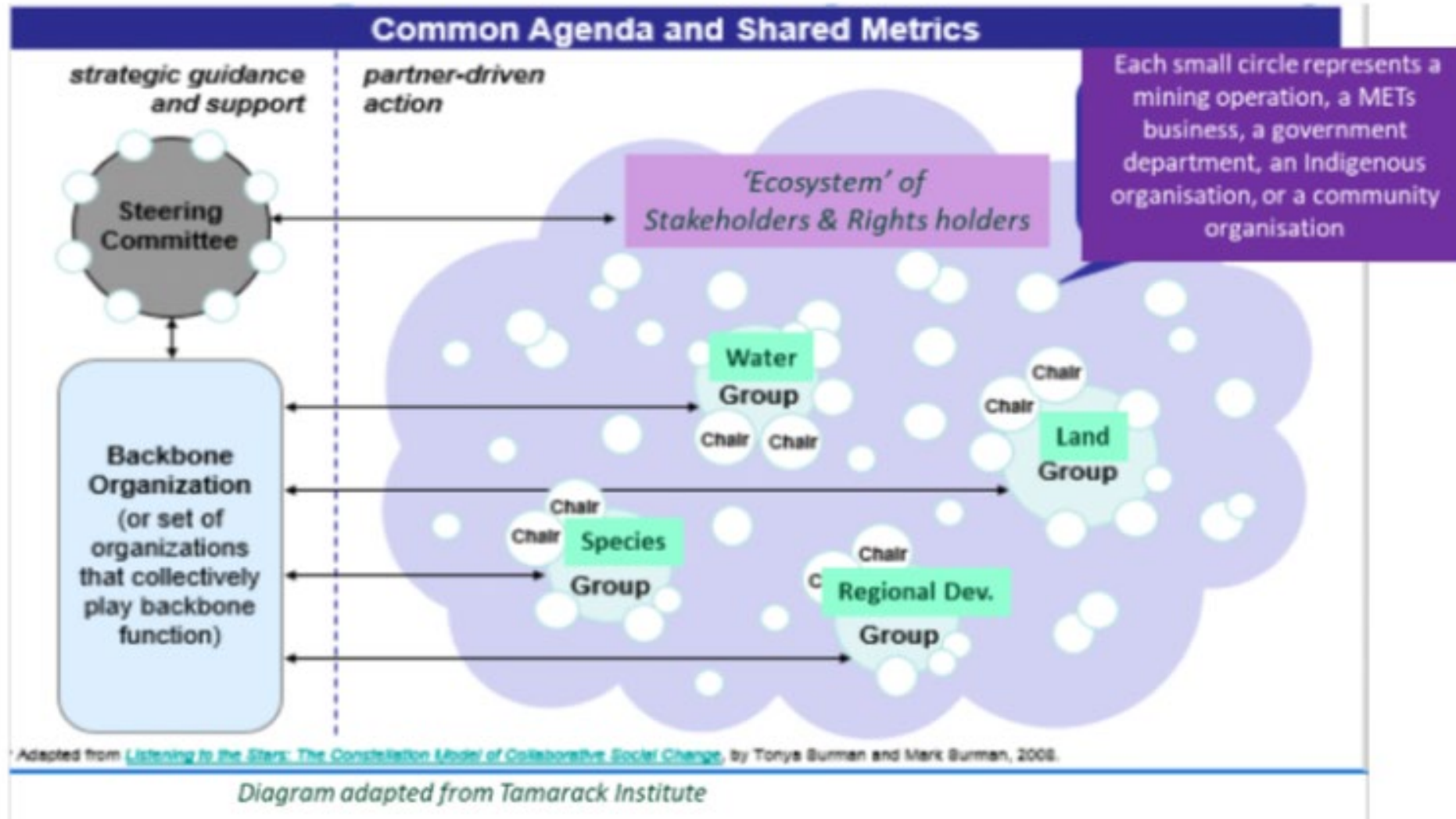
- Readiness Criteria
- Pilot Region Selection
- Alignment Survey
- Scoping and Co-design (Assessment)
- Collaborative Self-Assessment
- Readiness Gaps
- Scoping and Co-design (Gaps)

# Readiness Criteria



- Enabling Criteria
  - Common valued component
  - Imperative/urgency for RCEAM
- Readiness Criteria
  - Maturity of knowledge sharing
  - Equitable social and political capital
    - Stakeholders, Rightsholders
    - Resourcing and capacity
  - Maturity of governance
    - Backbone organisations
    - Champion for valued component

# What RCEAM Might Look Like



# Fortescue Catchment, Pilbara , WA



- Upper Fortescue Catchment ~30,000 Ha
- 20 iron ore mines
- Around \$30B AUD GRP
- Around 70,000 jobs
- Dewatering of around 100GL annually
- Home to five Traditional Owner groups
- Largely FIFO workforce

# Readiness Assessment Participants – Fortescue Catchment

First Nations	Industry	Government	Research
<ul style="list-style-type: none"> <li>Banjima Native Title Aboriginal Corporation</li> <li>Karlka Nyaparli Aboriginal Corporation</li> <li>Puutu Kunti Kurrama and Pinikura Aboriginal Corporation</li> <li>Wintawari Guruma Aboriginal Corporation</li> </ul>	<ul style="list-style-type: none"> <li>BHP</li> <li>Rio Tinto</li> <li>Mineral Resources</li> <li>Hancock Iron Ore</li> <li>Fortescue Metals</li> </ul>	<ul style="list-style-type: none"> <li>Dept. Biodiversity, Conservation and Attractions</li> <li>Dept. of Planning, Lands and Heritage</li> <li>Dept. Water and Environment Regulation</li> <li>Dept. Mines, Petroleum and Energy</li> <li>Pilbara Development Commission</li> </ul>	<ul style="list-style-type: none"> <li>Western Australian Biodiversity Institute</li> <li>Curtin University</li> <li>University of Western Australia</li> </ul>

# Alignment Survey



- Reduction in **water level and quality** associated with cultural and environmental features resulting from dewatering and pit lakes
- Reduced **access to land and resources** associated with rights resulting from complex tenure arrangements
- Decline in **species diversity and ecological function** associated with natural environment resulting from extensive disturbance and altered landforms
- Uneven **regional development and living pressure** associated with communities and service decline resulting from population and employment fluctuations

# Scoping and Co-Design – Fortescue Catchment Readiness Assessment



- Indigenous organisation engagement
  - Board and Land & Heritage Committee approval required
  - Workshop will require co-design
- Industry Engagement
  - Management approval required
  - Difficult time of year
- Research-engagement gap
  - Cultural and organisational decision making
  - Need to walk the talk

# RCEAM – Overview, Outputs and Key Findings

## Foundation Project (completed)

- Evaluative/Predictive
- Enduring
- Not replacement for EIA
- Existing frameworks inadequate
- Strong demand
- Many constraints and challenges

## Stage 1 Case Studies (completed)

- RCEAM Typology
  - Who, who, what
- Decision Tree
  - Initiation and planning
- Case Studies

## Stage 2 Developing Capacity (current)

- Governance Models
- I-RCEAM Framework
- Roadmap & Toolkit
- Readiness Assessment Pilot (Scoping)
- Readiness Assessment Pilot (Co-design)
- Communication & Impact

## Stage 3 Capacity Enhancement (Proposed)

- Regulatory Requirements
- Knowledge Hub
- Governance Support
- Education and Awareness
- Knowledge Sharing
- I-RCEAM Framework

# Project Participants



Kalkadoon  
Indigenous  
Social  
Services





Links to Reports

**Thank you**



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.

# ***Thank you!***

Let's continue the discussion:

**@IAInetwork #iaiawebinar**



**International Association  
for Impact Assessment**