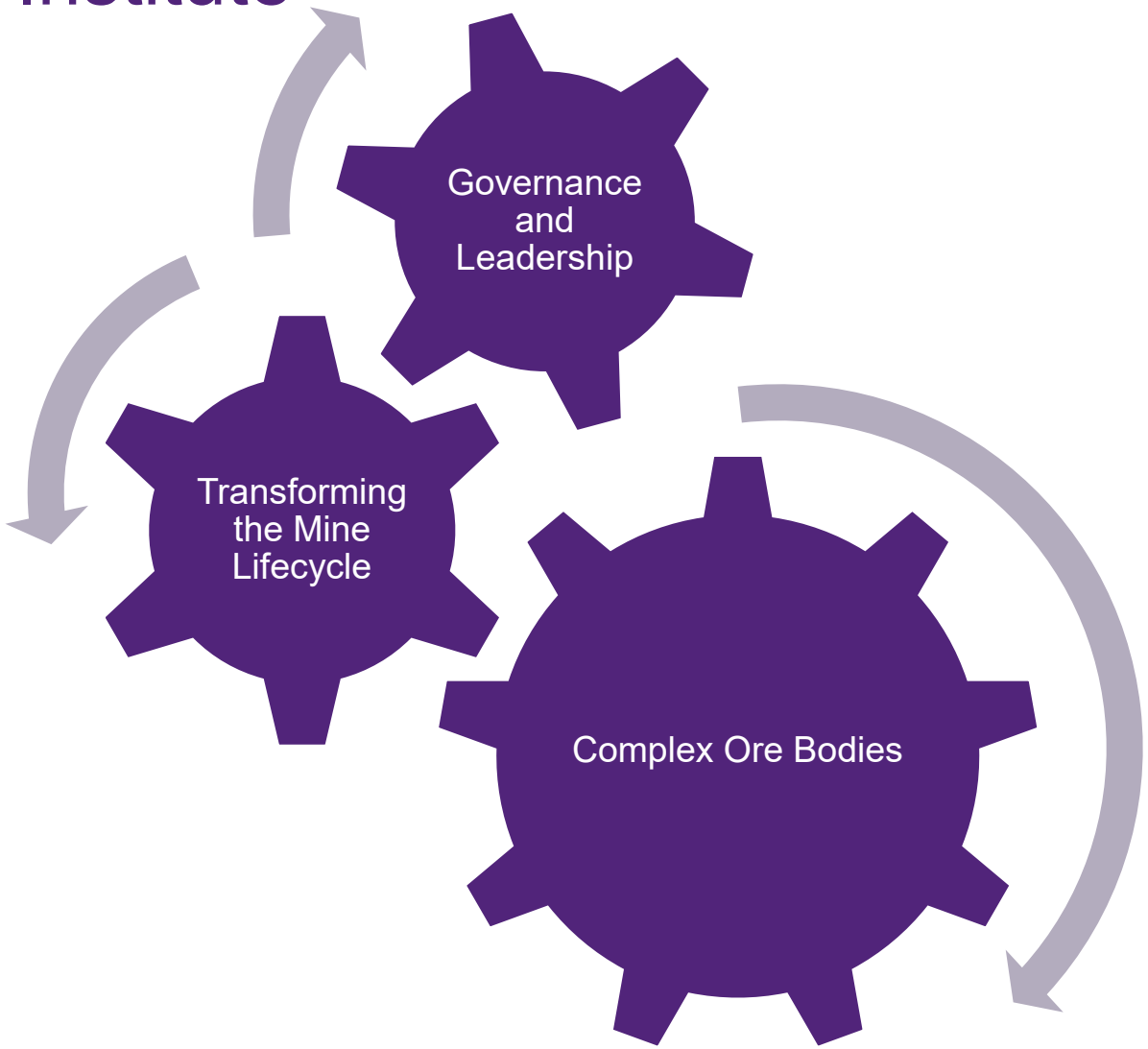
THE UNIVERSITY OF QUEENSLAND
AUSTRALIA
CREATE CHANGE

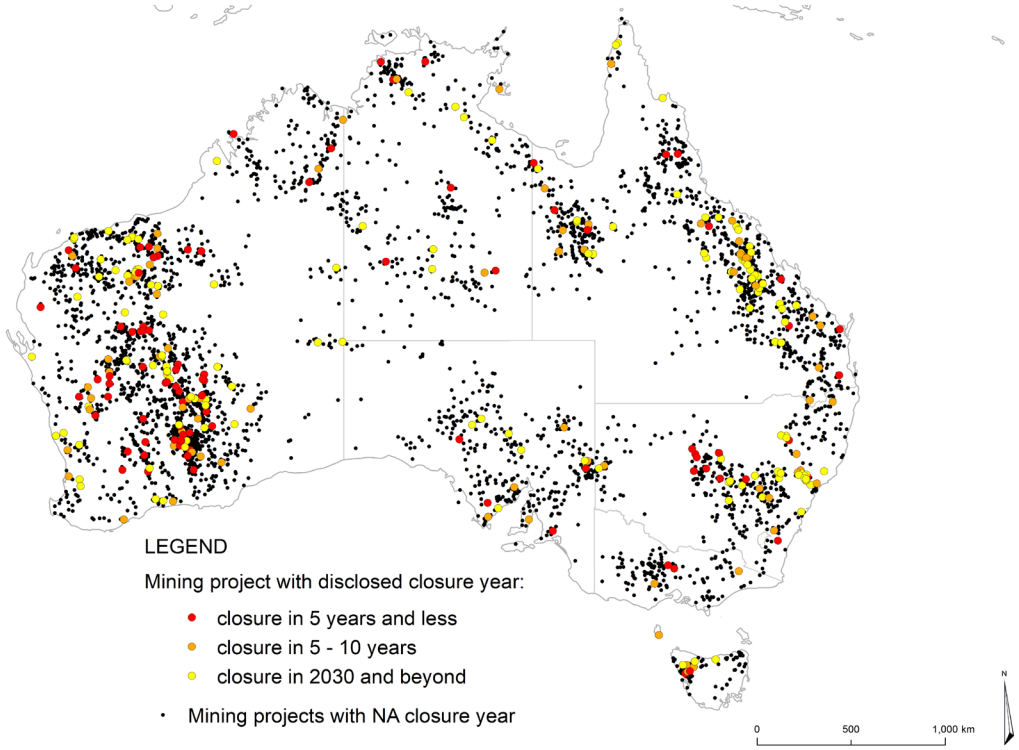
COB-supported work in mine closure

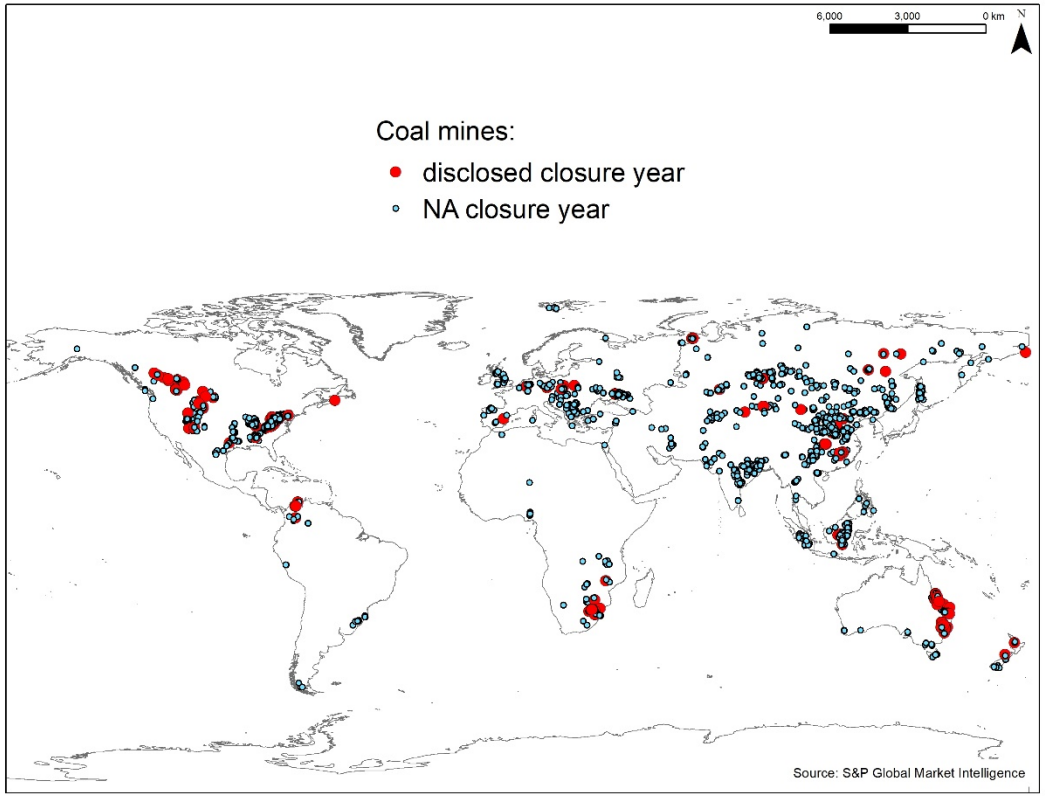
Closure Research as an integrative platform across the Institute



- **Closure Database**
- Social Aspects of Closure Consortium
- Potential CRC for Transformations in Mining Economies (TiME)
- Global Consortium of Tailings Research

More than a database……





Research studies

i. Coal mining policy, policy network analyses and energy transition
ii. Public participation processes for mine closure and social transitions
iii. The multi-risk vulnerability of global coal regions in the context of mine closure
iv. Life post-closure: perception and use of rehabilitated mine sites by local communities
v. Coal phase out frameworks: global potential to transit
vi. Assessment framework for optimal final land use after open pit coal mining

Coal mining policy, policy network analyses and energy transition

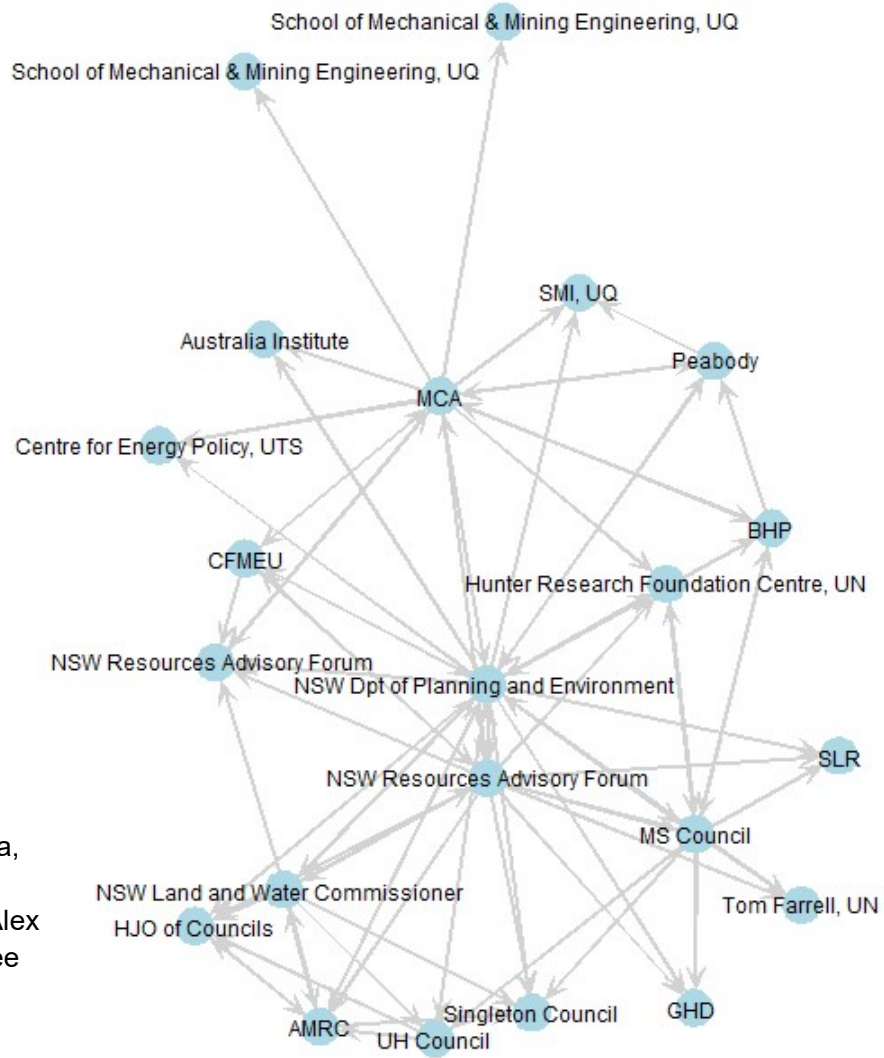
The University Of Queensland AUSTRALIA

Collaboration with Czech University of Life Sciences and Masaryk University in the Czech Republic, University of Nottingham Malaysia Campus and Silesia University in Poland

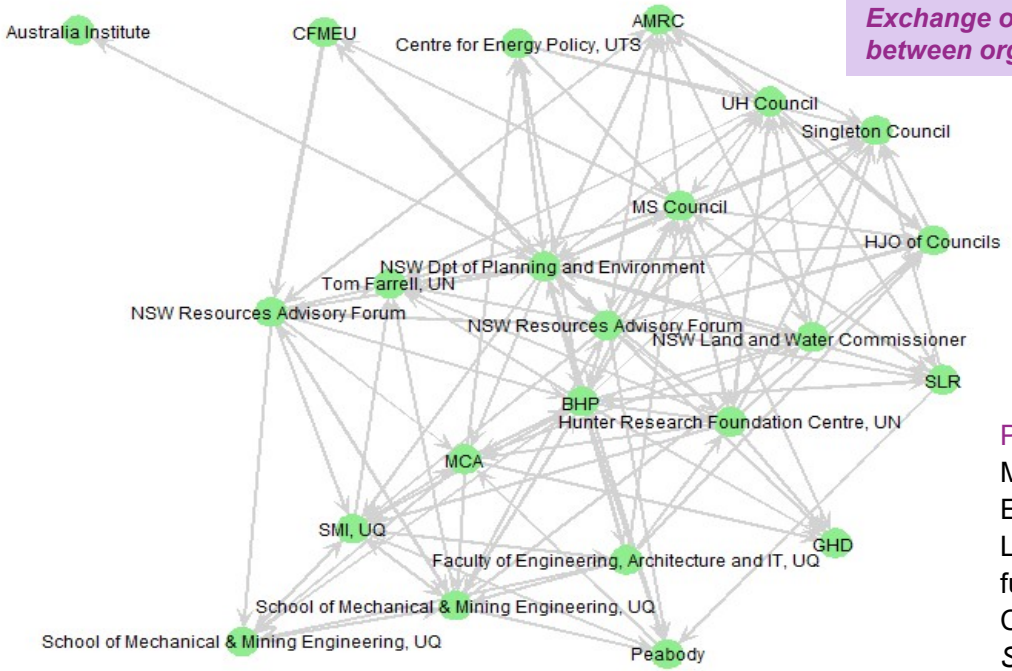
Context: Decline of coal mining is a part of energy transition process that increases policy uncertainty. Coal dependent countries such as Australia, Czech Republic and Poland face the same strategic decision: how to phase-out.

Aim: Identify involved policy actors and their coalitions in public coal mining policies, using policy network analyses and media content analyses

Political cooperation network in NSW



Exchange of expert information between organizations in NSW



Published paper: Ocelík, Petr, Kamila Svobodova, Markéta Hendrychová, Lukáš Lehotský, Jo-Anne Everingham, Saleem Ali, Jaroslaw Badera, and Alex Lechner. "A contested transition toward a coal-free future: Advocacy coalitions and coal policy in the Czech Republic." *Energy Research and Social Science* 58 (2019): 101283.

Public participation processes for mine closure and social transitions

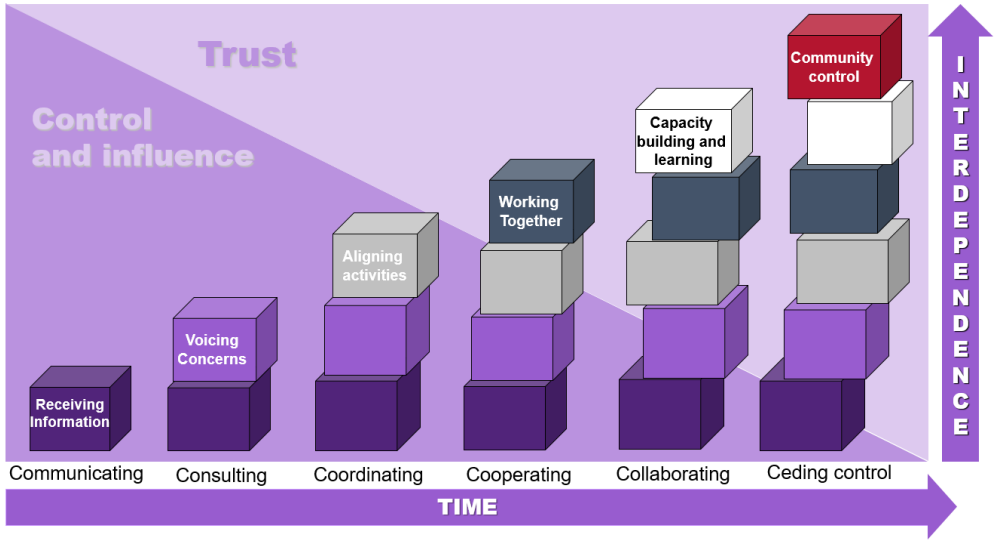
CSRM team: J Everingham, K Witt, K Svobodova, S Mackenzie

- An industry-funded project commissioned for 2019 under the SMI Research Consortium on the Social Aspects of Mine Closure hosted by CSRM

  Context: Mine closure is now widely regarded as a multi-party process, rather than an issue only for companies and the regulator. Industry leading practice such as the ICMM principles and performance expectations (ICMM 2018) endorse inclusive consultation and partnership with local communities and outline commitments of member companies throughout the mining life cycle – including closure transitions.

  Objective: Profile processes for public participation and engagement of affected communities, stakeholders and rights-holders. It will assess how such mechanisms could be or have been implemented during mine transition or closure phases and indicate the potential benefits (for companies, communities and regulators) of such participation and engagement.

- Paper submission in March 2019 to The Extractive Industries and Society



Participation processes analysed and profiled:

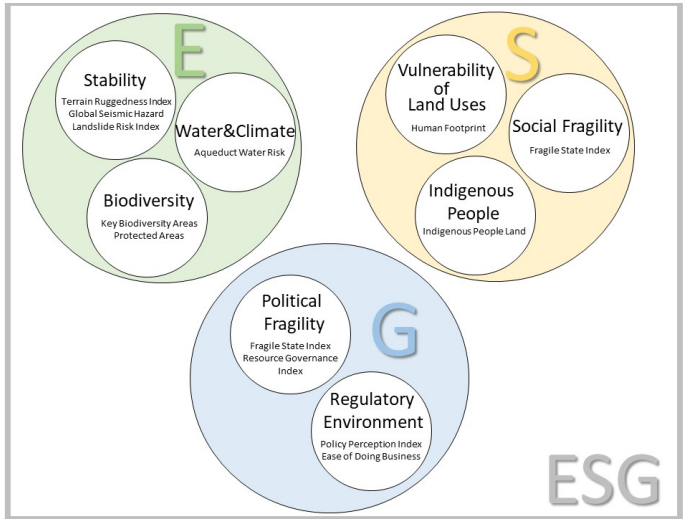
- Community reference groups
- Impact and benefit agreements
- Future visioning
- Participatory GIS
- Foundations and trusts
- Strategic community investment
- SIA for closure
- Participatory monitoring and evaluation
- Rapid appraisal using the indicators toolkit
- Towns transition tool

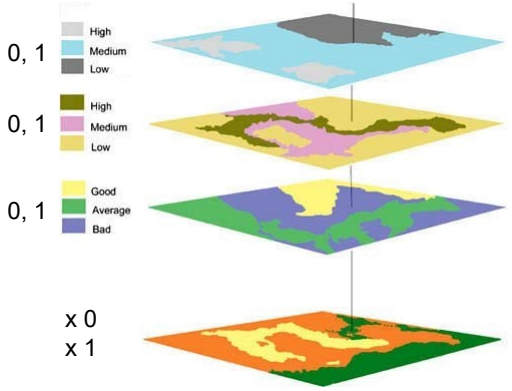
The multi-risk vulnerability of global coal regions in the context of mine closure

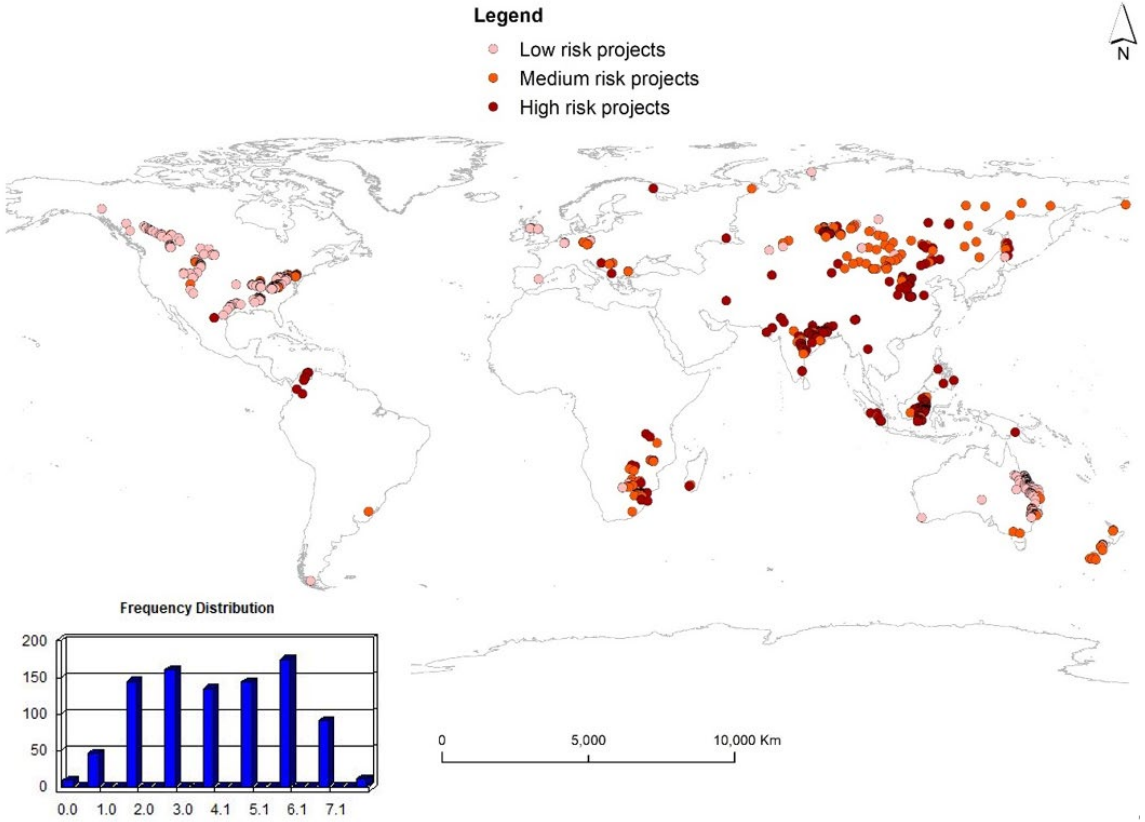
SMI team: K Svobodova, JR Owen, E Lebre, M Edraki, A Littleboy

Context: In some jurisdictions, a rapid and widespread closure of coal mining projects can be expected in order to meet legal demands on a low carbon future. All this can result in negative consequences for coal mining regions, involving a broad range of complex risks. To achieve long-term sustainability and social gain in these regions, closure approaches should consider co-occurrence of multiple risks.

Aim: analyse the complexity of environmental, social, and governance (ESG) risk factors that can cause significant difficulties in closure of coal mining operations in mining regions







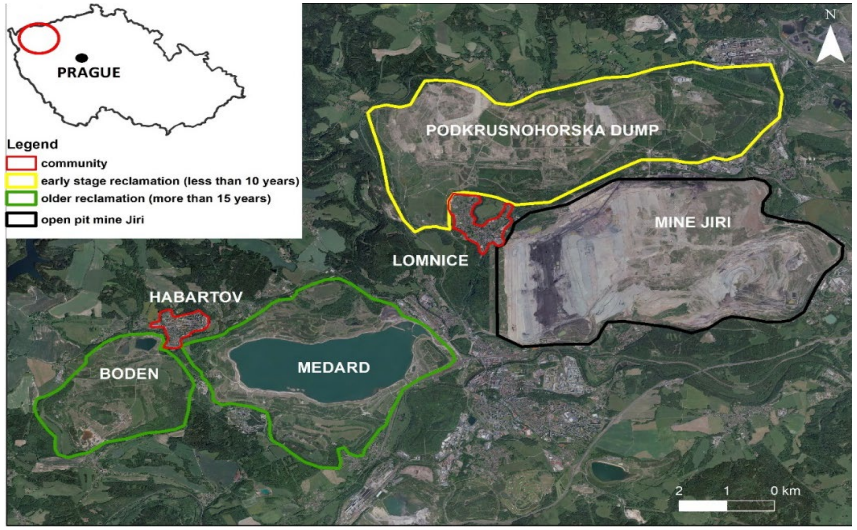
- Conference paper presented at Mine Closure 2019: Svobodova, K., Owen, J., Lebre, E., Edraki, M., & Littleboy, A. (2019). The multi-risk vulnerability of global coal regions in the context of mine closure.

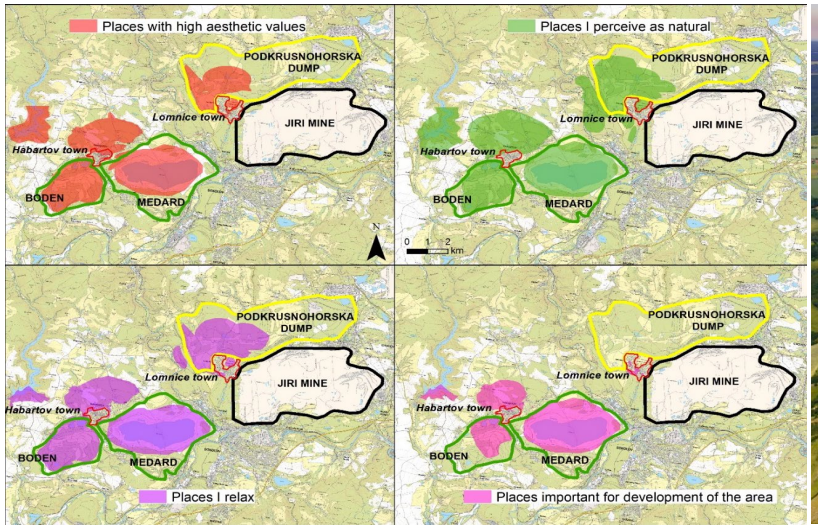
Life post-closure: perception and use of rehabilitated mine sites by local communities

CSRM team: K Svobodova, JR Owen

Context: A defining feature of communities living in close proximity to mine operations is the pattern of cohabitation between a mine and a community. The way in which people relate to place affects how they express what they value and the qualities of life that they value. In this way, place attachment might determine the success or failure of mine closure planning efforts on a community level.

Aim: Investigate how people living in close proximity to an active open pit coal mine and mine rehabilitation sites perceive and use their neighbourhoods. How these perceptions differ between two communities in relation to mine closure and relinquishment.





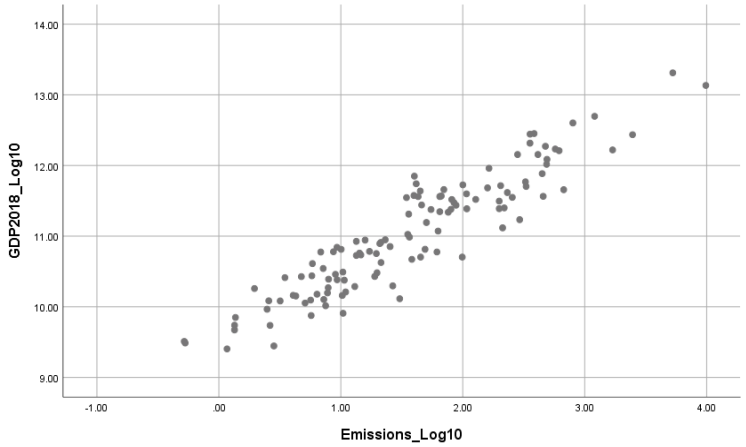
- Conference paper presented at Mine Closure 2019: Svobodova, K. "Life post-closure: perception and use of rehabilitated mine sites by local communities." (2019): 333-344.

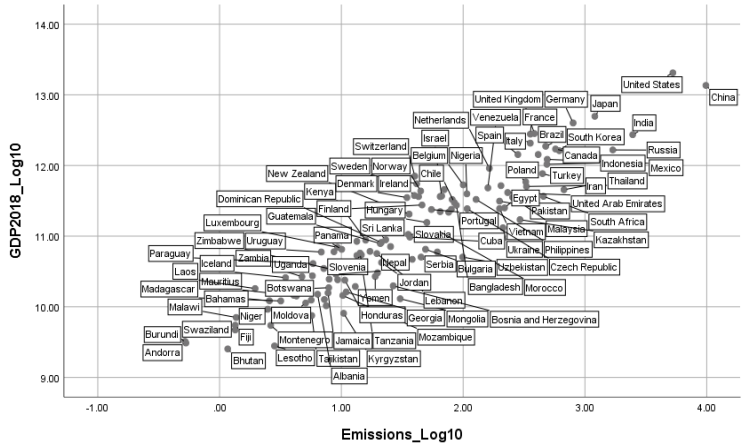
Coal phase out frameworks: global potential to transit

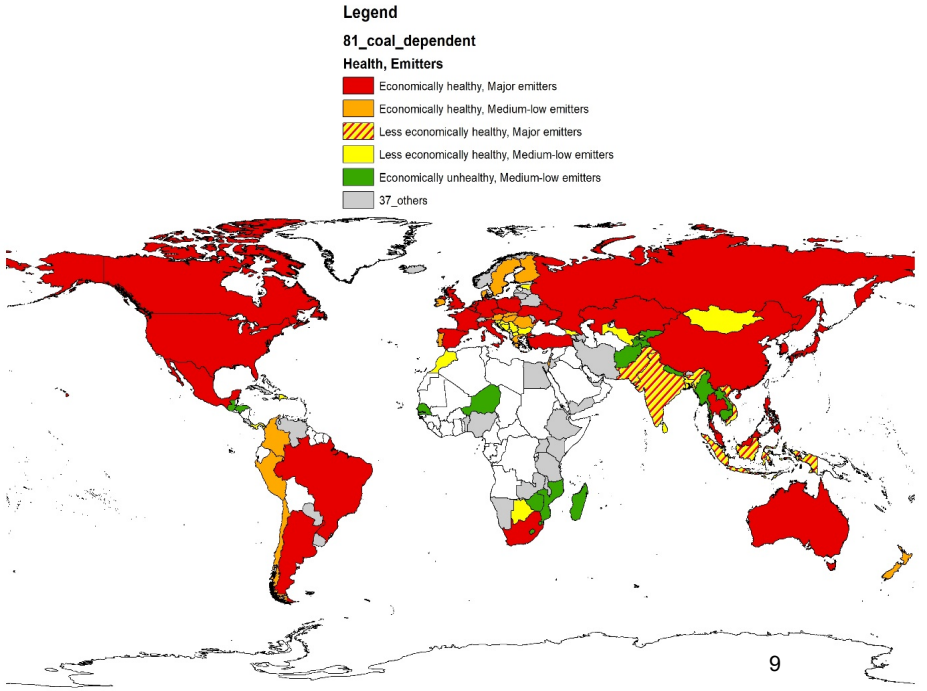
CSRM team: K Svobodova, J Owen, S Worden, J Harris

Context: The main challenges for energy transition movement are imbalances in the development paths between the countries as well as the rapid speed of change. We face major uncertainties such as changes in energy and commodity market designs, tensions between renewable energy deployment and network investments. All this accompanying by the continuous increase of energy consumption in emerging countries. Moreover, as the energy world is largely intertwined, developments in energy sectors of one large economy will have direct or indirect effects on another one.

Aim: Map global potential for nation states to adapt to coal phase out frameworks. To better understand what factors contribute to the potential, we investigate two key drivers of the potential - national economic health and national energy security, and their relationship; looking through the lens of the national production of GHG emissions.







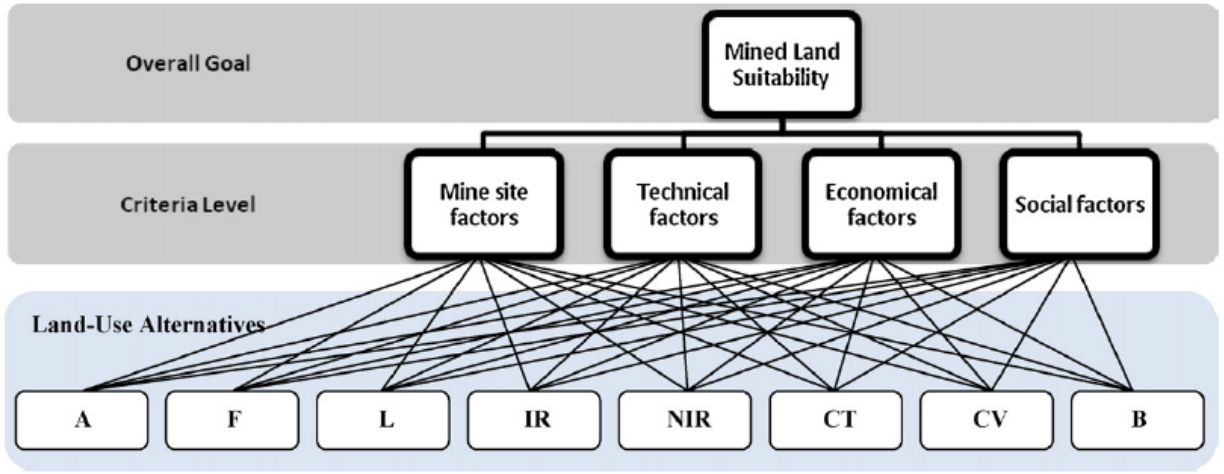
- Paper submission in Dec 2019 to *Applied Energy*

Assessment framework for optimal final land use after open pit coal mining

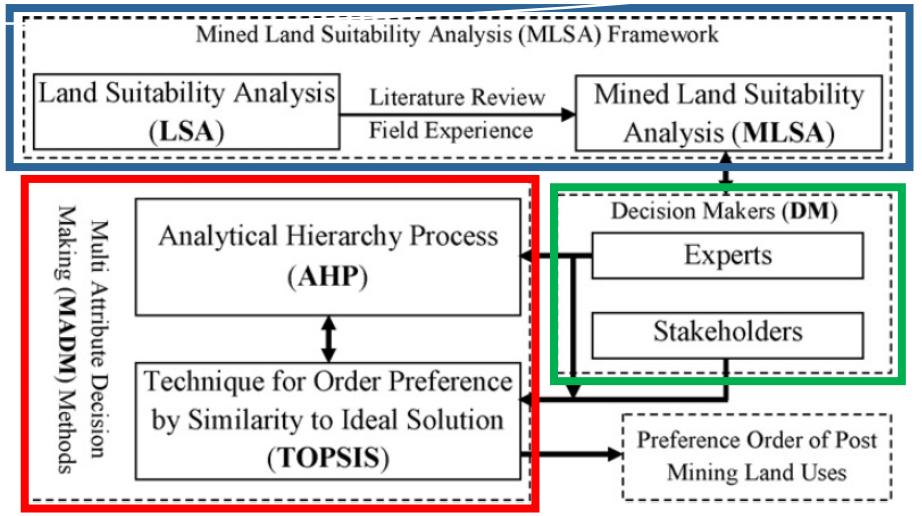
CSRM team: AP Arratia Solar, J Owen, K Svobodova

Context: Considering imminent closure of a vast number of coal mines due to climate change targets, there will be an urgent need to efficiently plan post-mine land use toward future sustainable development of coal regions. The expectations for post-mining land use are high. Besides the environmental considerations, including safe, stable, non-polluting and accessible post-mine lands, local communities will also expect strategies to sustain socio-economic transitions to post-coal environments.

Aim: Design of a post-closure assessment framework that will provide a conceptual assessment tool to support planning and decisions processes for the transition towards post-mine environments, increasing local resilience and regional sustainability.
- To minimise social and economic disruptions and environmental degradation of the regions via timely appropriate and eligible decision processes in mine closure planning.



Soltanmohammadi et al. 2009



LSA identifies "land types" and through MLSA determine options for future "use"

Decision Makers (DMs) express their preferences

Developed a reliable decision making tool MADM

Published papers in 2019

- Ocelík, Petr, Kamila Svobodová, Markéta Hendrychová, Lukáš Lehotský, Jo-Anne Everingham, Saleem Ali, Jaroslaw Badera, and Alex Lechner. "**A contested transition toward a coal-free future: Advocacy coalitions and coal policy in the Czech Republic**." *Energy Research and Social Science* 58 (2019): 101283.

- Owen, J. R., D. Kemp, É. Lèbre, K. Svobodova, and G. Pérez Murillo. "**Catastrophic tailings dam failures and disaster risk disclosure.**" *International Journal of Disaster Risk Reduction* (2019): 101361.

- Svobodova, Kamila, Mohan Yellishetty, and Jiri Vojar. "Coal mining in Australia: **Understanding stakeholder knowledge of mining and mine rehabilitation.**" *Energy policy* 126 (2019): 421-430.

- Svobodova, K. "**Life post-closure: perception and use of rehabilitated mine sites by local communities.**" (2019), Australian Centre for Geomechanics, *Proceedings Mine Closure 2019*: 333-344.

- Svobodova, K., J. Owen, E. Lebre, M. Edraki, and A. Littleboy. "**The multi-risk vulnerability of global coal regions in the context of mine closure.**" (2019), Australian Centre for Geomechanics, *Proceedings Mine Closure 2019*: 553-562.

- Svobodova, K., Littleboy, A., Owen, J., Edraki, M., & Higgins, R. (2019). **Thinking beyond closure: toward a mine closure database**. 9th International Conference on Sustainable Development in the Minerals Industry (SDIMI 2019).

Papers in progress to submit 2019 - 2020

- **Coal phase out frameworks: global potential to transit** (Kamila Svobodova, John Owen, Sandy Worden, Jill Harris; submission Dec 2019 to *Applied Energy*)
- **Drivers of Cooperation in Adversarial Subsystem: A Case of Coal Policy in the Czech Republic** (Petr Ocelík, Tomáš Diviák, Lukáš Lehotský, Markéta Hendrychová, Kamila Svobodova; submission Nov 2019 to *Energy Research and Social Sciences*)
- **Evaluating the impact of coal exports on domestic energy policy paralysis in Australia** (Kamila Svobodova, Jo-Anne Everingham, Saleem Ali, Mehmet Altingoz; submission Dec 2019 to *Global Environmental Politics*)
- **A media analysis of coal and energy policy in Australia 2005-2018** (Jo-Anne Everingham, Kamila Svobodova, Petr Ocelik, Nikita Minin; submission Dec 2019 to *Energy Research and Social Sciences*)
- **Mine reclamation planning and management: towards more naturally valuable post-mining landscape planning** (Markéta Hendrychová, Kamila Svobodova, Martin Kabrna; submission Nov 2019 to *Journal of Environmental Management*)
- **Life in a mined land: place attachment as a driver of adaptation** (Kamila Svobodova, John Owen; submission Feb 2020 to *Sociologie Ruralis*)
- **Post-mining land-use determination based on a ranking methodology using decision makers expert knowledge** (Andrea Arratia Solar, John Owen, Kamila Svobodova; submission March 2020 to *Land Use Policy*)

Student research and theses

- **Andrea P. Arratia Solar**: Assessment framework for optimal final land use after open pit coal mining (MPhil Research; 1.5y)

- **Lucia Neme**: Data landscape for spatial planning in coal mining regions (Research project course; 2 semesters)

- **Joel Hamago:** Local community livelihoods and their relationship with Multi National Companies in resource extraction (PhD thesis)

Conferences and workshops in 2019

- **SDIMI 2019:** The 9th International Conference on Sustainable Development in the Minerals Industry, Sydney 27–29 May 2019

- **Mine Closure 2019.** Perth 3-5 Sept 2019

Mine Closure 2019

13th International Conference on Mine Closure

3-5 September 2019 | The Westin Perth Western Australia

ACG AUSTRALIAN CENTRE FOR GEOMECHANICS
CSIRO | The University of Western Australia | Joint Venture

- **Workshop Reimagine. Repurpose. Relinquish.** Perth 1 Sept 2019

Reimagine. Repurpose. Relinquish.
Workshop
1 September 2019 | Cassia & Karri Rooms, The Westin | Perth, Western Australia

bioscope environmental

In planning for closure, a mining company puts forth a vision of what the coming years will hold for its site. Otherwise known as the post-mining land use, this vision captures what condition and what use(s) the company visualises for the land. The company then works steadily towards achieving that vision. However, even when a company has met all of its rehabilitation and closure obligations, regulators and/or other stakeholders may still be reluctant to allow a mine to be relinquished, particularly where this requires custodial transfer of risk. Consequently, it encounters barriers, frustrations and costly delays.

This one day workshop includes presentations and interactive sessions. In the morning, the programme will discuss the challenges, barriers and opportunities associated with relinquishment, and discuss current policy and practical issues associated with custodial transfer of risk. During the afternoon, we will reimagine the closure planning process to repurpose this for relinquishment planning.

Workshop notes will be available to the registered workshop delegates, post workshop.

Click here to view the list of attending companies.

Click to view the programme (subject to change)

Workshop Facilitator

Sonia Finucane
Director and Principal Consultant
Bioscope Environmental Consulting Pty Ltd

Sonia provides closure services to projects in Australia, the Asia-Pacific and Africa. With more than 30 years of experience, she has been involved in closure planning for mining, industrial and infrastructure projects and operations. Sonia works at the interface of the environment and community, and has a strong track record in providing practical advice and workable solutions.

Workshop Presenters

Dr Kirsty Beckett
Principal Mine Closure
Fortescue Metals Group
Kirsty is a multi-disciplinary geoscientist who specialises in mine closure management. Kirsty's technical experience across a range of environmental disciplines enables her to see beyond the technical outputs to develop site specific closure strategies that reduce risk and cost, and capitalise on opportunities during the mine life.

Chris Tiemann
Environment & Community Manager
Independence Group
Chris is a HSEC professional with 10 years mining experience in Australia and the Asia-Pacific region. In his current role, Chris is responsible for overall management of Independence Group's group closure planning processes and liability estimates. Chris is also undertaking a PhD in mine closure policy, focusing specifically on relinquishment.

Dr Kamila Svobodova
Research Fellow
University of Queensland & Czech University of Life Sciences Prague
Kamila is a landscape engineer with PhD in architecture and urbanism. She works with the Centre for Social Responsibility in Mining at Sustainable Mineral Institute. Kamila's research interests span landscape planning, human perception and mine rehabilitation. Her expertise is in understanding the importance of environmental psychology when designing a post-mining landscape. Beside her academic career, Kamila has worked as an urban planner, and participated in various regional development planning projects.

Matt Finucane-Woodman
Sustainability Advisor
Bioscope Environmental Consulting Pty Ltd[/five_sixth_last]
Matt is a sustainability advisor with experience in the environmental and social impact assessment and management of mining, infrastructure and energy projects. He has a special interest in social sustainability and stakeholder engagement.

Thank you

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Questions?