

CASE STUDY

Project 2.1: Understanding the values of stakeholders in Australian post-mining economies: Latrobe Valley, Victoria



Extracted from: Foran, T., Barber, M. and Ackermann, F. (2022). [Understanding the values of stakeholders in Australian post-mining economies](#). CRC TiME Limited, Perth.

These are extracts only. Each should be read in context of the full final report. Please refer to the full report for more information.

Introduction

Latrobe Valley sports three large open cut lignite (brown coal) mines: Hazelwood (closed in 2017), Yallourn (closing 2028), and Loy Yang (scheduled to close by 2048).

The mines face substantial and pressing uncertainty with respect to permissible and preferred options to rehabilitate their final pit voids. This has resulted in varying perceptions among stakeholders regarding the appropriate distribution of public and private responsibility for delivering post-mining land use (PMLU) outcomes.

There is a need to establish a positive legacy for the sites and amenity benefit, avoiding social, environmental and economic burdens. At this point in time, it appears that need exists for supportive leadership and structured processes for diverse stakeholders to plan together.

Background

The traditional custodians of the areas, now referred to as the Latrobe Valley in Victoria's Gippsland region, are the Gunai and Kurnai ('Gunaikurnai') people, who named many landforms in the Valley, and have native title claims recognised across Gippsland (Context, 2019; GLaWAC, 2015).

Latrobe Valley (population 74,000) is the site of three large open cut lignite (brown coal) mines: Hazelwood (closed in 2017), Yallourn (closing 2028), and Loy Yang (scheduled to close by 2048) (Figure 1). Large-scale coal mining dates to the early 20th century. It accelerated with the formation of Victoria's State Electricity Commission (SEC) in 1918, a state owned vertically integrated utility, subsequently privatised in the mid-1990s. During the 20th century, coal mining and power generation (combined 4,716 MW capacity) transformed settlements in the Latrobe Valley from small agricultural townships into three larger towns: Moe, Morwell, and Traralgon (combined population 48,300). Employment at the three coal mines and power stations is estimated at 1,250, considerably lower than an estimate of >9,000 people in the 1970s (Context, 2019).

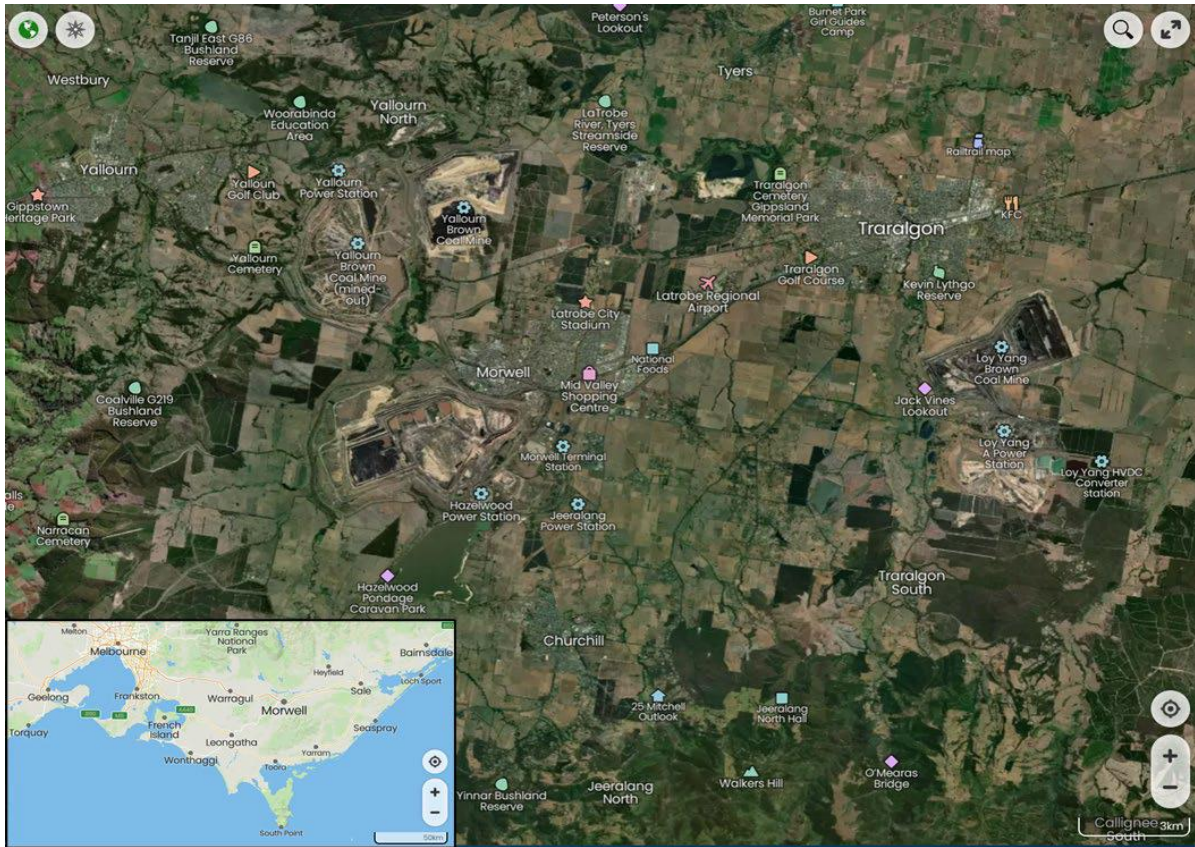


Figure 1: Latrobe Valley in Victoria. Source: Mapcarta.com and Mapbox

Latrobe Valley’s three coal mines face substantial and – in the case of Hazelwood and Yallourn – pressing uncertainty with respect to permissible and preferred options to rehabilitate their final pit voids. The current uncertainty has policy and political dimensions. It stems from diversity and divergence among the issue framing, values, and interests of government, private sector, and civil society stakeholders in the Latrobe Valley and beyond around the pros and cons of the known landform rehabilitation options (e.g., water from the Latrobe River system; manufactured water; solid capping) and their local and regional effects.

Diversity in values and interests results in varying perceptions among stakeholders – including people interviewed by this research project – regarding the appropriate distribution of public and private responsibility for delivering post-mining land use (PMLU) outcomes. The above diversity can also be detected as different interpretations of responsibility to address the social, economic, and environmental legacies of coal mining in the Latrobe Valley. The uncertainty around potential and preferred landforms inhibits community and other stakeholder engagement in envisioning future land uses.

In principle, differences in interests and values could be explored and addressed through deliberative inquiry, exploring alternative post-mining development options, informed by knowledge of the costs, benefits and opportunities associated with each option. Such an inquiry contrasts with the risk mitigation perspective taken by mine closure regulation. However, for concerned parties to participate, they must recognise the need for such deliberation, and suitable processes are required. In the past, Latrobe Valley stakeholders have engaged in important programmes of collaborative planning and action, particularly following the 2014 Hazelwood Mine Fire, and a 2016 decision by Engie to close Hazelwood mine five years ahead of schedule. At present, however, no planning process exists which provides a structured, substantive, and participatory multi-stakeholder inquiry into post-mining land use and development options on mined land and surrounding buffer zones.

The Latrobe Valley is a region characterised by multiple planning initiatives. Existing policy frameworks and initiatives include:

- Environmental regulation under proponent-led models (e.g., Environmental Effects Statement).
- Strategic planning principles published in the LVRRS (Latrobe Valley Regional Rehabilitation Strategy).
- The Central and Gippsland Region Sustainable Water Strategy.
- The Gunaikurnai Whole-of-Country Plan (GLaWAC, 2015).
- Regional development initiatives for Gippsland led by the Latrobe Valley Authority (LVA), Latrobe City Council and Gippsland Regional Partnerships.
- A 2022 Transition Plan initiative (proposed by LVA).

Notable gaps exist between these frameworks and initiatives. For example, the LVA initiatives have not thus far explored mined land rehabilitation as a growth sector nor explored future possibilities on mine license land. The LVRRS commissioned a preliminary land use vision in 2019 (DELWP, 2019) but has not yet built on this study by elaborating a spatial master plan for post-mining development options (including their relative costs, risks, and feasibility). Meanwhile, it is not clear whether implementation of the Sustainable Water Strategy will include new or enhanced platforms to resolve the depth of stakeholder contestation for water. The above initiatives thus led by different proponents, do not adequately explore post-mining development options, and appear to have limited coordination.

A recent study of values held by Latrobe Valley residents, and representatives of public and private stakeholder groups, found a need to establish a positive legacy for the sites and amenity benefit, avoiding social, environmental and economic burdens (Reeves et al., 2022). At this point in time, it would appear that need exists for supportive leadership and structured processes for diverse stakeholders to plan together.

Mining's impact on the region

Respondents' conceptions of mining's impact on the region can be considered from two perspectives: that of elements of the **system context** invoked by Respondents, and that of **place-related, substantive or procedural, values**. Each perspective corresponds to a set of codes used in our content analysis. As noted above, the codes are not mutually exclusive – interview content could be assigned to codes in either or both sets.

The types of **place-related, substantive or procedural, values** invoked by Respondents were (in order of declining number of Respondents):

- Economic values of place (generalised).¹
- Impact on urban development or housing.
- Impacts related to the region's identity or historical legacy.

Respondents from all stakeholder categories (five out of eight Respondents) agreed that mining and power station development had caused transformative economic changes:

Latrobe Valley would not be the place it is without having been in the centre of the State's power generation, the mining facilitated the power generation, obviously, and both of those activities have driven the economic development and structure of these regions. I think we'd

¹ Not including 'urban development or housing'.

be looking at a much more agricultural community, less densely populated... maybe there'd still be industry, but a much lower proportion of what it is – and not spread as much as it is across the whole landscape either. You might just have one large town as opposed to three relatively central, community centres. (Respondent 4).

The Hazelwood coal mine came in the late 1950s and then also through to Loy Yang in the late 1980s, from memory early 1980s, but really when all those sites were up and running the Latrobe Valley was essentially quite a community and mining and power station hub. I think the total employees within the Latrobe Valley at one stage was in upwards of 20,000 people, so that that allowed a whole different community to feed off that... so at one point in time, the Latrobe Valley was absolutely huge. I mean, that was just the place to be. (Respondent 8)

Notwithstanding broad participation in mine-related employment, respondents noted socio-economic disparities:

Aboriginal people in the Valley have worked with the mines... and now there is a level of employment that has come from the mines, whether that's a socially equitable distribution of wealth, that's something to be questioned. So it's not all good, but yes, there have been jobs provided. (Respondent 7)

Mining's impact on urban development or housing was referred to by Respondents in three of six stakeholder categories (three of eight Respondents), including its restrictive impacts on development:

... land was locked down for future coal use and Council couldn't win the battle to try and get an alternative land use. Land that has previously been locked up for future coal use and mine operations should be released for future planning and alternative uses. Small towns potentially could have grown further, but because of mine overlays, potential land was not realised. (Respondent 1)

Not surprisingly, the region's identity or historical legacy was associated with mining and power generation, and this Respondent expresses concern with fairness of the region's historical development:

There's a pride in the Valley too for being the power generators for Melbourne. But there's also a burden associated with that [as in] 'we've done this for Melbourne for so long, and we're left with having a cancer cluster, and we're left with this legacy of the mines as they're closing, so the impact is multi-level, boom and opportunity, and identity, and then this burden and legacy, both in the people in the community but definitely in the landscape and the waterways as well. (Respondent 3)

Elements of the **system context** invoked most frequently by the stakeholders were (in declining order):

- Economic security (five of eight Respondents).
- Health (three of eight Respondents).
- Aquatic ecosystems and water resources (two of eight Respondents).

Previous levels of economic security have been undermined by recent mine closure and concerns about forthcoming mine closures:

I think mining development has also had a big impact on attitudes and expectations of the community in terms of economic outcomes, your personal sort-of wage, and social expectations, the expectation that you don't need to leave the region to study, or to get a job, that everything is available right close to home. (Respondent 4)

Respondents expressed concern about air quality particularly in relation to mine fires (which occurred in 2009² and 2014):

We had a mine fire in 2014 which sent toxic smoke across our community for over 50 days. There are still health studies now looking at the long-term effects. The risk is if you leave the mind void without putting anything into it or covering the coal seams there is potential fuel load in there to have another devastating fire. (Respondent 1)

Mining has also impacted on aquatic ecosystems and water resources:

So there's a physical presence [of mines], and with that the significant modification of the waterways in and around, and downstream. So changing of the water table but also really significant changing of the waterways like the Morwell River now goes around one mine and through another one.... this is all upstream from the Gippsland Lakes, planning modifications of the Morwell or the Latrobe of course impact the Gippsland Lakes as well. There is a significant amount of water that is used though for energy generation that's captured upstream of that in various reservoirs, so that has impacted flow downstream. Quality of water has been impacted as well. (Respondent 3)

Best possible outcomes and significance of outcomes

The top three³ types of **place-related, substantive or procedural, values** invoked by Respondents were:

- economic values of place (generalised)⁴ (six of six stakeholder categories, seven of eight Respondents)
- safety and risk (three of six stakeholder categories; four of eight Respondents)
- mutual reinforcing benefits (three of six stakeholder categories; three of eight Respondents).

Economic values of place were expressed in terms of employment or livelihood security:

I think near-term is that there is opportunity for people to change, find a career elsewhere within the region. It might not be the same as what they had before, but it still provides them with the ability to stay within the region and have a lifestyle that that they can be comfortable and give them meaning, and also helps the region to continue to grow. (Respondent 4)

The best possible outcomes for the community is that the mines are able to be used, or the historic mines at that point, are able to be used for jobs, for attraction to the industry, so the people that are losing their jobs can find something as well. (Respondent 5)

For Respondents from Mining and METS stakeholder categories (as well as one of the two Researchers with a geo-technical background), the ability of rehabilitated mine land to support economic values was tied to concerns with **safety and risk**. Respondents from Mining and METS consistent in favouring the use of water to fill the three coal mine voids, as a means to address geotechnical stability challenges, as well as to enable optimal post-mining development.

If you've got a landform that doesn't move, that isn't exposed to large fires and the like, then you could potentially build things like houses nearby, you can allow further development. You

² The Churchill fire of 7 February 2009 (Black Saturday) killed 10 people and is described as an act of arson (Farnsworth, 2012).

³ Ranked by number of Respondents in descending order.

⁴ Not including 'urban development or housing'.

can allow use of these lakes in the long-term because you can gain safe access to these things. (Respondent 8)

I'm just thinking back to the Ruhr Valley in Germany where they've linked up a couple of old mines with a lock system. So you can go from one to the other in a lock and they have huge amount of tourism around the sides of it. And they have boats that take people on beer cruises and restaurants and, and you can go in between the two of them. And then... you can create cycle paths and all sorts of things all the way around it. You can create, white water canoeing, kayaking and surf places – we can create surf places in some of these things – you can make it a mecca for water sports and tourism. (Respondent 5)

So it's working through... how you go from turning something which has a number of risks attached, into something that takes care of those risks in the most practical way, because by doing that you allow the most beneficial number of beneficial end land uses and I've mentioned whether it's housing developments, whether it's nearby industry, you can, then it becomes really open, and you can do a whole range of different things nearby these lakes. (Respondent 8)

The idea of **mutual reinforcing benefits** is suggested in the quote from Respondent 8 above. As the best possible post-mining outcome, this construct found expression in the following ways:

I think the long-term aspiration is that these voids become a useful part of the landscape, that they're not just an economic drain but they become an economic good, but also a social good and an environmental good – a well-being good. (Respondent 4)

However, the notion of mutual reinforcing benefits was invoked by a Respondent to refer to addressing pre-existing Indigenous objectives, as well as agricultural aspirations. Such visions require adequate allocations of water and are potentially competitive to mine void rehabilitation:

There is a one-off opportunity really. With the water that's currently legislated for power generation– that water could revitalize environment, could revitalize the cultural values of the Gunaikurnai people. It could increase security for irrigators and therefore a regional future for the Valley. So there is an opportunity here if people take the long-term holistic view and the quadruple bottom line view. (Respondent 7)

The idea of **net-positive benefit** – a summative evaluation not tied to any specific rehabilitation option – was clearly communicated by one Respondent who had previously studied community values in the Valley:

There's a strong sense in terms of what's left behind: there must be an amenity of some sort. There must be a positive legacy. Now what that looks like in terms of landform and what that looks like in terms of land use is of course highly contested, but for me personally, as long as there is a positive benefit for the environment, surely we can only do better with the environment than what has been before, and it must be a positive legacy, but also that whatever is left is something that enables opportunity for the community that it is a benefit and a positive legacy for them to have, not the continued burden that they've already carried. (Respondent 3)

Elements of the **system context** invoked most frequently by the Respondents were:

- Aquatic ecosystems and water resources (three of six stakeholder categories, five of eight Respondents).
- Economic security.
- Institutional arrangements.

Each of the latter two elements was referred to by three Respondents in three of six stakeholder categories.

Three types of institutional arrangements were referred to as mediators of the best possible outcome: water allocation among competing users; long-term regional planning; and land tenure. With respect to land tenure, the Respondent from a community organisation noted that:

I think that Council, to a certain degree, has been locked out of the door on the control or discussion on land use, because it's considered to be land tied up in the mining license, of mining operators of private companies. So, is that land going to be handed over to the community? Does the Council need to buy that land? What is going to be the purpose of it? We don't necessarily want other industries in there that are going to cause other major issues for us, for instance lead, or other sorts of industries, which might cause future harm to our community. (Respondent 1)

Not surprisingly, there is a correlation between interview content we coded as economic values of place (generalised) (reported above) and content coded as economic security (an element of the system context). Likewise, content coded to the 'safety and risk' value of place, correlated with 'aquatic ecosystems and water resources' in the system context.

Challenges to achieving outcomes

Figure 2 shows all elements of system context referred to by Respondents as challenges to achieving their best possible outcomes. The figure shows that challenges related to water resources or aquatic ecosystems comprised the most frequently referred to system element (5/6 stakeholder categories; six of eight Respondents).

The next most frequently invoked system categories were attributes and relations of actors and environment or natural resource conditions. Respondents expressed concerns about the following attributes and relations of actors: concerns about degree of agreement, confidence or commitment, as well as concerns about conflict, contestation, or disagreement. Two environmental concerns – about climate change, and land, landform or soil – were expressed with the same level of prevalence as the above attributes of actors.

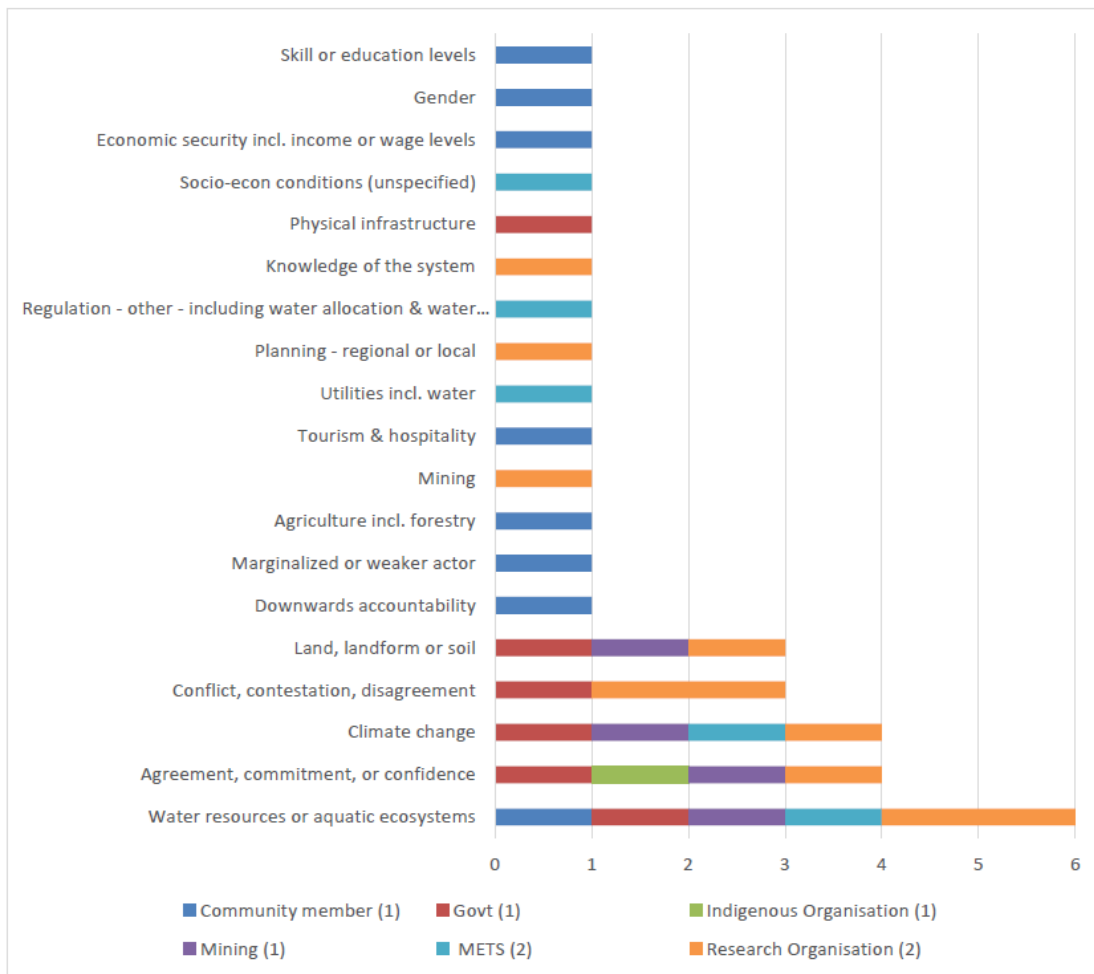


Figure 2: Elements of system context regarded as challenges to outcome achievement.
Note: x-axis denotes number of respondents coded. Legend refers to stakeholder category of CRC TiME. Number in parenthesis denotes number of respondent per stakeholder category.

The following quotes express the confluence of socio-political and ecosystem challenges:

The biggest challenge is indeed, to really confirm that [filling the mine pits with water] is the best outcome... while there has been a short while ago, a strong consensus that water fill is the way to go, there has been quite a bit of upstir recently in terms of are we actually having enough water and, so there's a bit of scenario modelling happening, the community has some strong voices which want to have at least some of the pits being empty, so not water filled. (Respondent 6)

The lack of certainty makes this difficult. So, at the moment, no one knows – the mines know that the only technical solution is water, whether we've got climate change or not. The only technical solution is water, there is not enough material to make our mines stable. So that's the only solution, but there's uncertainty on where we're going to get the water, what the cost is, everything else. So none of the business or private industries can be invited in to have those discussions early enough. (Respondent 5)

The biggest elephant in the room for these three sites is the use of water, they are massive holes... it's only going to get drier, not wetter, and so there's a huge amount of sensitivity around the role that water plays... Each of the mine closure plans have flagged water as being their preferred option. There's quite a lot of pushback from the community, but also from Melbourne in particular, that that amount of surface water cannot be justified going forward.... there's I think three government departments that have some say in what happens to the rehabilitation and they don't agree with each other. So there's decisions that are made at a state government level, usually in offices in Melbourne, that have a direct impact on what happens in the valley, and there's a very, very strong tension between Melbourne and the Valley because of that. (Respondent 3)

The quote from Respondent 3 indicates that lack of interagency agreement at the state level could be regarded as reflecting lack of agreement among interests in Latrobe Valley over water, as well as contributing to tensions between people in the region and their state government.

Dimensions of actions taken

The two most frequently referred to dimensions of action taken to address key challenges were: issue framing or advocacy (5/6 stakeholder categories), followed by knowledge generation (2/6 stakeholder categories).⁵ The two stakeholder categories from which participants described their action in the most multifaceted way were the Mining and the METS categories (three dimensions of action each) (Figure 3).

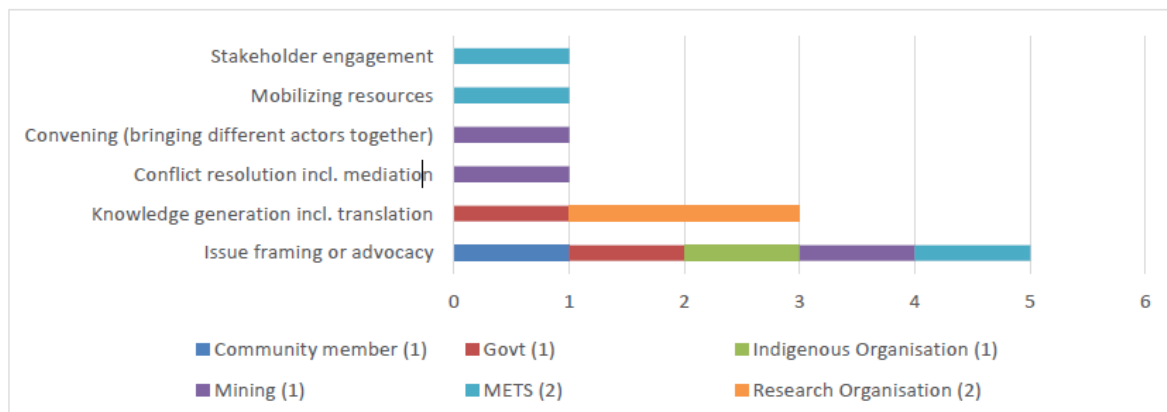


Figure 3: Dimensions of actions to achieve outcome (Latrobe Valley). Note: x-axis denotes number of respondents coded. Number in parenthesis denotes number of respondent per stakeholder category.

With respect to issue framing or advocacy, Respondents referred to particular processes, as well as outcomes as they considered necessary. Respondent 4 and Respondent 5 advocate for whole-of-government collaborative approaches with all mine licensees and power station operators in the Valley:

⁵ The word 'dimension' (not 'type') is used to refer to classify actions, reflecting the fact that a given action could have more than one function.

We've engaged heavily with government and the LVRRS [Latrobe Valley Regional Rehabilitation Strategy]⁶ about what they're doing and why they're doing it. We told them a while ago that they needed to engage with all 3 mines and to try and get us to a point where we can all collaborate and that was the government's job. Before we told them that... they weren't going to do it... we will be lobbying them, continually lobbying them to say, 'Come up with different solutions. Get us around the table. Get us all talking and be realistic.'

(Respondent 5) (Mining)

As a [government] organisation, we have been encouraging – no, we would like to see – a whole-of-government perspective on this resolution. It seems unlikely that the licensees can rehabilitate their mine without actually having a collective understanding between themselves and government on what is an acceptable level of residual risk, so what risk profile would government be happy with. Because without that, I think they can't plan their landform, and then we can't have a discussion on land use and opportunity. (Respondent 4)

Respondents 7 (Indigenous organisation) and Respondent 8 (METS) advocate for water-related interests which stand in tension with each other:

Government has got a number of processes around the mine rehabilitation... we're not in all of them. We were on one of the committees, which we're now just there as an observer. And that's to protect the Gunaikurnai view from being a negotiated outcome with other user groups... DELWP's got a committee around the Implementation Item 3⁷... the premise was... that should not have a detrimental impact on existing entitlement holders. Now the problem is that the Gunaikurnai people are water users and have been for thousands and thousands of years, but their water was taken away from them so they're not recognized as water holders, even though it's their water that they never ceded. (Respondent 7)

I think it's about selling the outcome and selling what's possible, because if you get people to the point of being able to recognise physically what's out there and what's achievable, they'll then focus on, 'well, how do we get that?'... we actually try and help people visualise what the outcome can be and then it becomes more about 'well, I just want one of them!' So look I will continue to be advocating that the best way to solve this is to just see it now as an engineering problem, and find the water, and as soon as we get people to that point where... we've got all these people in Victoria and all of these smart people focusing on 'where's this water coming from?' we'll get to the answer. (Respondent 8)

Beyond rehabilitation, Respondent 1 (Community) is concerned about the status of participatory processes for planning the Valley's future:

I've spoken to... another Gippsland regional group that's connected with the government department and I've been saying to them, 'Who's taking this conversation with the community, who's going to lead this, is anybody going to lead this consultation?' It feels like there's a vacuum that no one's stepping up to lead the discussion or to lead the journey about our regional focus and our future. (Respondent 1)

Respondent 1 indicates that the framing of the problem of post-mining development extends beyond the scale of the mined land to broader issues of regional transition. The quote from the Indigenous Respondent underscores the finding that actor disagreements over water constitute a challenge to achieving post-mining development.

⁶ An initiative of Victoria's Department of Environment, Land, Water and Planning (DELWP) and Department of Jobs, Precincts and Regions (DJPR).

⁷ The third and fourth implementation items listed in the LVRRS involves DELWP and DJPR providing guidance on, and exploring feasibility of water sources and access arrangements for mine licensees to undertake rehabilitation (including but not limited to Latrobe River system water) (DJPR & DELWP, 2020, p. 30).

The Mining Respondent saw value in having government convene different mine licensees and government *agencies* to debate and deliberate on options – that is, value in the actions of **convening, mediation, and dialogue or deliberation**. However, our Respondents did not refer to such actions as those their organisations had taken to date. Rather, the Respondents had engaged in **knowledge generation**. For example, Respondent 4's organisation has contributed to knowledge on geotechnical stability outcomes and residual risk under different water availability scenarios.

A particular type of knowledge that some Respondents see the importance of generating is around which opportunities are possible, and desired, by stakeholders, as a function of how the mine pits are rehabilitated. After a community focus group discussion around mined land organised by their organisation, Respondent 4 reflected:

The questions [community members] were asking were once again focused around opportunity. And someone was just saying, 'well, people are putting out surveys and asking say, do we want to a BMX track or do we want this? But we don't want a BMX track if it's going to cost us a million dollars a year just to maintain it because of the risk profile of the mine... It got me thinking, maybe we need to start having conversations about opportunities that you can have, no matter the risk, because there are some there. So maybe we need to actually start thinking about that and use that as the worst-case scenario, because there are some things, for example solar farms, you could probably have them across most of the mine license, no matter what you've done with the actual pit void itself.

Thus, even as different Respondents advocate for different problem and solution framings, it appears that they share a common interest in the generation of knowledge about landform rehabilitation options, and impacts and implications of alternative options. Given high levels of disagreement and contestation, a need exists for modes of knowledge generation which bring actors together.

Other main stakeholders

Figure 4 shows the distribution of responses to Question 7 (conception of other main stakeholders). Respondents in four of six stakeholder categories referred to community organisations or individuals in community as the main stakeholders:

The community as such, of course, is a stakeholder... the city of Morwell is only 500 meters away from the pit, there is a direct link, and they can be directly affected by that, by the outcome. Respondent 6 (Research)

*... recreational users, whether it's bushwalking, fly fishing, the windsurfers who can't wind surf anymore, all of those sorts of groups, birdwatchers, very keen environmental groups who are interested in this. Interestingly.. the Latrobe Valley feeds into the Gippsland Lakes through the fringing morasses there, and there's one of the largest field and game groups in Victoria, manage the environmental values of the Heart Morass. So it's one of the main field and game areas, and they've done decades of rehabilitation work there. And so, although they're downstream, they are deeply interested in what's happening in the Valley.
Respondent 3 (Research)*

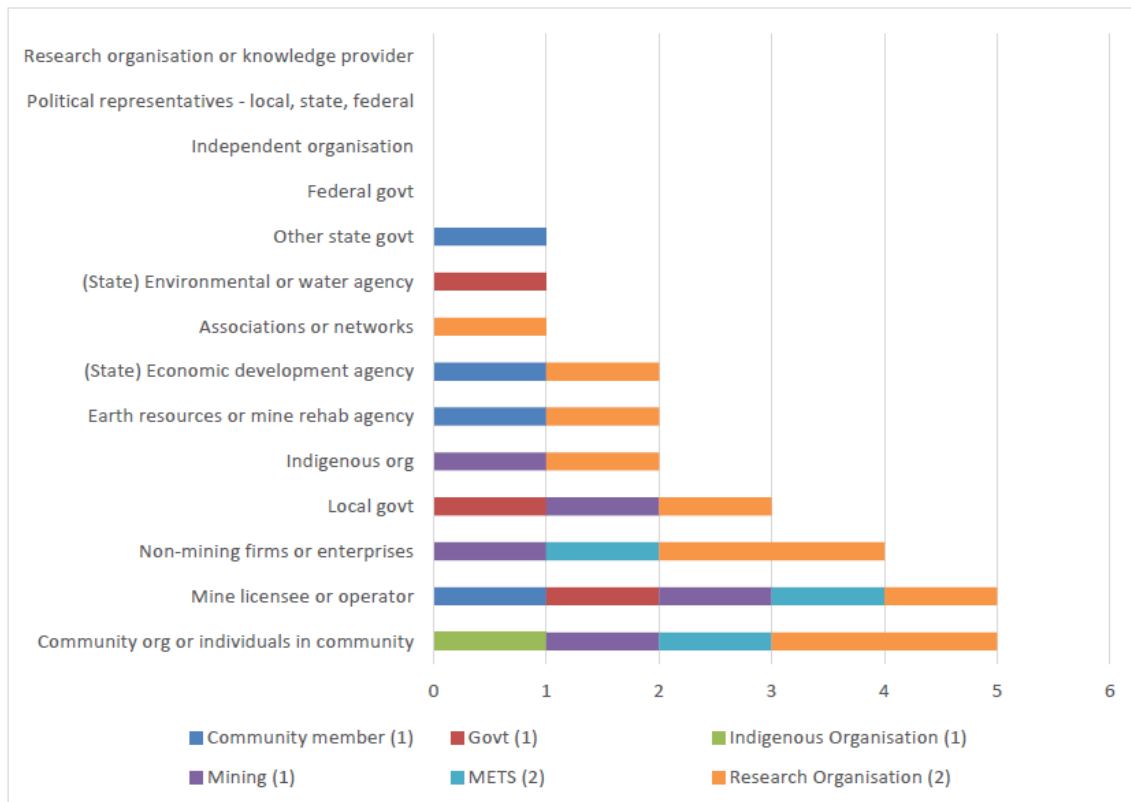


Figure 4: Other main stakeholders (Latrobe Valley). Note: x-axis denotes number of respondents coded. Number in parenthesis denotes number of respondents per stakeholder category.

Compared with references to the above types of actors, Respondents made fewer direct references to state government agencies as main stakeholders. Nonetheless, the references made to state government agencies indicates their importance, both as future public trustees as well as present-day regulators influencing the transition agenda:

It's government, because they through the Mined Land Rehabilitation Authority, are potential owner of the land in the future, they need to know where the journey is going. And they're also responsible, of course, to the people, to the community. Respondent 6 (Research) Now is the crux of the time when we can leverage off [mine licensees'] influence and about what they could be doing with the community, but they can't make many moves because they're so focussed in on about what Earth Resources and government license requirements require of them. They can't proactively do much else than what they [currently] do in their mining and their rehab, they can't do other preventative measures, they can't sort focus on forward thinking, or their strategic plans looking into the future. They don't have much time left. Respondent 1 (Community)

Local government, and firms outside the mining or METS sectors, were each referred to Respondents in three of six stakeholder categories. As Respondent 5 (Mining) put it, because of the importance placed on water for mine void rehabilitation 'anyone who wants to use the water becomes a stakeholder as well.'

Understanding of other stakeholders' best possible outcomes

Figure 5 shows the distribution of responses to Question 8, which invited interviewees to express their understanding of best possible outcomes for two other categories of stakeholder. Respondents in three out of six stakeholder categories referred to **economic**

values of place (generalised) as a best possible outcome for other stakeholders. We received an additional three references to the specific economic values of: entrepreneurship or economic innovation (two Respondents), and housing or urban development (one Respondent). One respondent expressed the economic values of having a water-rehabilitated, accessible site as follows:

We've had a number of community consultation sessions where I've said... 'Do you want a site where you can get access to it, you can go to it, there's cafeterias, there's community activities. There's all this sort of good stuff, there's industry, there's hubs, there's townships in close proximity to these sites, and you're doing something with it. Do you want that, or do you want a nine-foot-high cyclone fence and you can't do anything with it?' So I think that the community will want something that they can utilise that they can earn a revenue off, if people can earn money, if there's jobs available, if there's supporting industries.... And then you've got the community where they've got something physically they can use in the longer term and the future generations, and they know it's stable and they know it's low risk. I think everybody wins but it's just getting to that point. (Respondent 8)

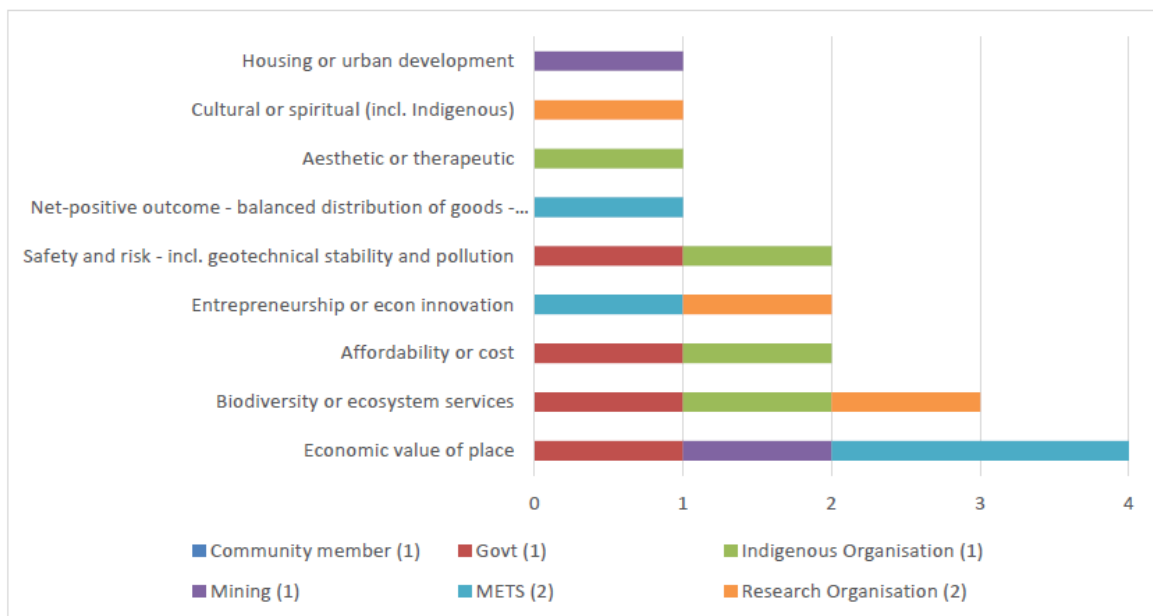


Figure 5: Respondents' understanding of other stakeholders' best possible outcomes (Latrobe Valley). Note: Legend refers to interview respondent. X-axis denotes number of respondents coded. Number in parenthesis denotes number of respondent per stakeholder category.

Stakeholders in three of six categories referred to **providing or enhancing biodiversity or ecosystem services** as a best possible outcome for other stakeholders. The following Respondent expressed concern for the loss of ecosystem services which would occur if river system water were used to rehabilitate mine pits:

They're calling them lakes. They're not lakes. They're not going to be recreation bodies. No one will be able to swim in them, they're going to be freezing. And the quality is going to be negligible... It's actually just going to be something that's taking water away from something that's already beautiful. (Respondent 7)

The tension between two sets of values – the values associated with mine pits de-risked by water fill, and the values associated with downstream aquatic ecosystems – is implicit in the following summary of best possible outcomes:

I think the best possible outcome for government would be that they somehow managed to get... an outcome with a low risk profile, and just amazing economic benefits for the region... so it takes care of that whole transition economic growth question for [the region]. I think for the environmental, irrigator, community interest groups, the best thing is that, as well as no impact to downstream environments. For the licensees, I think the best outcome is that they have an affordable way of achieving rehabilitation that will actually result in an outcome where they can relinquish their mine license. (Respondent 4)

In the above quote, a possible outcome is one that is also affordable. However, the definition of affordable cost, for another Respondent, was related to the broader issue of how natural resources were valued:

There is another solution... bringing recycled water from the Eastern Treatment Plant to the Valley, that could have spin-off benefits all along the way, because you could have connections along the way for farmers, for new development and therefore saving water resources in other ways as well... at the moment that water goes out to Boags Rocks. And also other [recreational] users have been talking about that for a very long time, so that becomes a viable solution, unless you just look at it from a monetary sense because obviously it's a lot more expensive, because river water is artificially cheap. (Respondent 7)

Key values and their alignment

Alternative water sources required for rehabilitation

Water resources were described as highly contested, differentiated, and at the mine pit level, requiring different types of technical management over time (Respondent 6). Respondents generally agreed that water was the preferred mine pit rehabilitation option. With the exception of one Respondent, interviewees considered the use of Latrobe River system water a politically infeasible resource.

The ability to access water for rehabilitation would enable multiple post-mining development options (with the range of options at the site level generally increasing in proportion to water quality). Conversely, if water were not available, landforms remain unstable, geotechnical rehabilitation is not possible (Respondent 2), and many post-mining land uses could be infeasible (eg recreational use and solar panels on slopes; Respondent 6).

The availability of water for rehabilitation of mine voids needs to be understood through a historically and politically informed systems perspective. Concurrently with mining, aquatic ecosystems in Latrobe Valley and downstream have been impacted by other historical developments, notably the construction of a water supply reservoir for Melbourne (Respondent 3). Commissioned in the 1980s, the 1068 GL Thompson Reservoir has resulted in lower than optimal flows in the river system. The value of water-based development on mined land was frequently described by Respondents in terms of socio-economic values. This set of values is in tension with the value of increasing ecological integrity in the catchment:

I honestly don't think that people [are] going to be upset if they're left empty or if they have water in them. If they don't take away from the other values that they have. So obviously if water in the pits means that there's decreased water in the Latrobe Valley, and then you end up with acid sulfate soils in the wetlands and all the fish die in the birds don't come back, that's too much of a burden for having water in the lakes there, and I think everybody in the Valley would understand that.

Similarly, if water wasn't allowed and they were allowed to be dry, but they were unstable, or they were stable but couldn't allow development on them, so fences went around them, there would be amenity loss there as well. So people want to be able to engage with these places, so their sense of ownership, connection, which takes different forms – they still want this positive legacy of: 'this is something that's done good, that it's done well, it's done for future benefit.' (Respondent 3)

Socio-economic values focused on post-mining land use also stand in tension with Indigenous values related to distributional justice. Fulfilling the latter set of values means restoring aquatic ecosystems and rights to access their services which have been diminished since European settlement:

There's not enough water to continue using it the way we've been using it... there's no water for the Gunaikurnai presently – there's a couple of buckets of water that people say aren't being used and everyone is getting excited on how they might reallocate that water, but that's a false water accounting, that water is actually propping up the environment at the moment, which still doesn't have enough... But the other thing is with those values, that the Gunaikurnai people have held for that area, that go back thousands of years there – connection to place, connection to Country, healthy mob, social cohesion, historic traditional and current connection, and it's economic connection as well, both from past economic movement and trade, and also current aspirations.... Now the land has been completely changed, and no one I don't think is purporting that it could go back to what it was, but there can be some restoration.... if you treated the Valley in a futuristic, 'let's look long-term' way, those outcomes could benefit all people: the Gunaikurnai people, the environment, irrigators, the townspeople, people needing jobs. There's that opportunity now. (Respondent 7).

The remarks of Respondent 7 indicate that **socio-economic development is one element of restorative justice, along with ecological restoration**. The relation is one of a potentially productive tension, as opposed to binary opposition.

Net-positive outcome

Both Respondents above invoke the idea of a **net-positive outcome** – a balanced distribution of ecological and social values. This value is a type of substantive good. Achieving a net-positive outcome was also regarded as a key value in the 2021 conference session. However, as the preceding discussion about water resources in a modified river basin reveals, the notion of a net-positive outcome going forward, is one that must take into account the objective of ecological restoration. This objective stands alongside mine pit rehabilitation.

Respondents recognised that the achievement of a net-positive outcome would require **enhanced institutional arrangements**. One dimension of enhanced arrangements would be to give community greater a voice in transition planning. Respondent 1, from the community, saw people in Latrobe Valley as less powerful actors who wish to make the best of their regional assets, and liabilities going forward, seeking to do so by self-empowerment:

So, we know we've got a fabulous community and we've got some really great things, but we don't want to just be known as that dirty Latrobe Valley from that brown coal era. We want to be given a chance to show and showcase our region of Latrobe Valley and then the broader part of Gippsland that we've got a fantastic asset... with some very talented people who want to stay in our community but what is it they're going to be staying for, what's the future going to look like? (Respondent 1)

A second dimension is the ability to formulate multiple alternative options:

And that's why, I think for the community of the Latrobe Valley, it will be not critical, but very important to have a really good understanding in terms of what's out there. We've touched on hydrogen, there's other aspects as well, repurposing of sites and opportunities might be very different and there might be some surprise wild fact out in the near future that we currently not aware of, but to keep looking at those opportunities, and then looking at how they can be applied here.... And I think ultimately, it'll come back to the commercial viability. Is it really – the options that we put out there – are they commercially viable?

(Respondent 2)

The formulation of alternative options for consideration by community members could be done by opening up state-led visioning and planning processes. Respondent 6 (Research organisation) characterised the first phase of the Latrobe Valley Regional Rehabilitation Strategy as producing a post-mining land use vision that did not meet expectations when compared to international practice:

The final outcome of the LVRRS [Latrobe Valley Regional Rehabilitation Strategy] was to have a transition plan – how to close and what that would look like, and that was really done... like a consulting exercise. So achieving something which, I think was very premature, and didn't really allow a wide range of options to be at least discussed... I think it is not where it should be or has to be, and referring again back to... the 20 years of experience [in Germany] of how to transition a landscape, industrial use landscape into something else.

They had, for example, an exhibition of possible land users coming in, and that is an international exercise and... idea collation, with the hope that maybe something falls out, which can be used from a strategic point of view. And I think the Victorian government is still in that very early stage to come to terms with what actually to do with the closed mine. And actually to get experience, we have to go [to international practice]... (Respondent 6)

In addition to processes of knowledge generation, Respondent 6 noted that the processes and bodies which aim to enhance coordination – namely, the Latrobe Valley Regional Rehabilitation Strategy, and Mine Land Rehabilitation Authority – have emerged only recently compared to other states, and considered their aspirations to be high, but potentially consequential:

Queensland or Western Australia have developed more profound rehabilitation law [than Victoria]... but having said that they have created through the LVRRS and now the MLRA... institutions, which are quite astounding I find in terms of what they try to achieve. Going through the Authority now, which is really lacking in all other states. So there is a kind of a catch-up and overtaking. (Respondent 6)

REFERENCES

Foran, T., Barber, M. and Ackermann, F. (2022). [Understanding the values of stakeholders in Australian post-mining economies](#). CRC TiME Limited, Perth.

ABOUT US

The Cooperative Research Centre for Transformations in Mining Economies is part of Australia's national innovation ecosystem. Our diverse partnership brings scale, collaboration and coordinated investment to tackle the most complex mine closure and post-mine transition challenges. Together we're rethinking what's possible to improve outcomes for people, communities, the environment and industry.

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



crctime.com.au



hello@crctime.com.au