



**Utilising the ‘back of the envelope’:**

**Estimating socio-economic impacts of mine closure through workforce surveys**

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## Structure of presentation

- > **Part 1:** Potential for socio-economic impact assessment (SEIA)
- > **Part 2:** Process followed in 3 recent CSR/M mine closure studies
- > **Part 3:** Approach and method to estimations
  - See paper for details re: calculations



## PART 1: Three CSRM closure studies

- > All North Queensland
- > Two open cut, one underground
- > Different:
  - Commodity groups
  - Workforce
  - Closure timeframes



## Socio-economic aspects of mine closure

- > Mines may not have *sole* responsibility for impacts, but are key players
- > Historically, mine closure not highly regulated
- > These days, industry acceptance that mine closure planning should be:
  - Considered as early as possible
  - + Include social, demographic, cultural and economic aspects



## How does SD apply to closure?

- > Challenges will vary depending on type of town
- > But, for some communities, mine closure = towns no longer viable.
  - Does this mean no contribution to SD?
- > Ideas about SD will differ between and amongst different communities and groups



## Current practice

- > Arguably, a new mine without closure plan that (adequately) considers socio-economic aspects should no longer be acceptable.
  - Many existing operations haven't done this.
- > But, the landscape is changing ... mines are increasingly considering impacts in the broadest possible sense.



## Many questions remain ...

- > Who determines when a mine is complete?
- > How do mining companies budget for future unknown social and economic impacts?
- > How long after closure does responsibility extend?
- > To what extent should post-closure impacts be monitored if there is no legal liability?
- > What are the best methods of estimating the social, demographic, cultural & economic impacts of closure?



## SEIA – Socio-economic impact assessment

- > No simple answers ...
- > SEIA has potential to provide operations with:
  - Information that informs closure planning by
  - Directing attention to key areas of *potential* impact
- > A basis to engage with communities to:
  - communicate *estimated* impacts
  - understand *perceived* impacts
  - explore opportunities



## SEIA – Methodological challenges

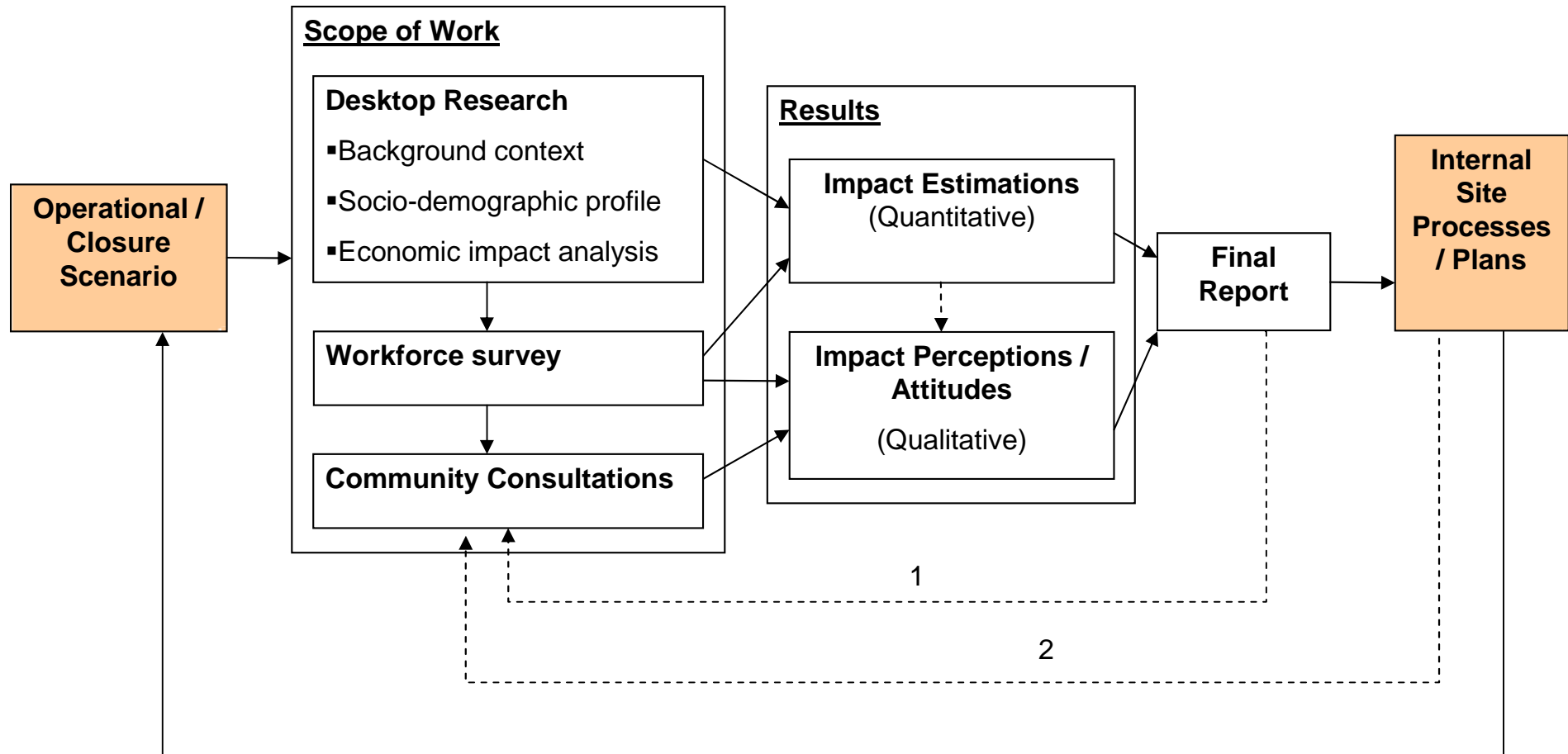
- > Methodologies for SEIA – particularly closure – are often ill-defined
- > Social aspects often not equally weighted in the decision-making process
- > Nevertheless, contribution of social sciences in mine planning has serious traction



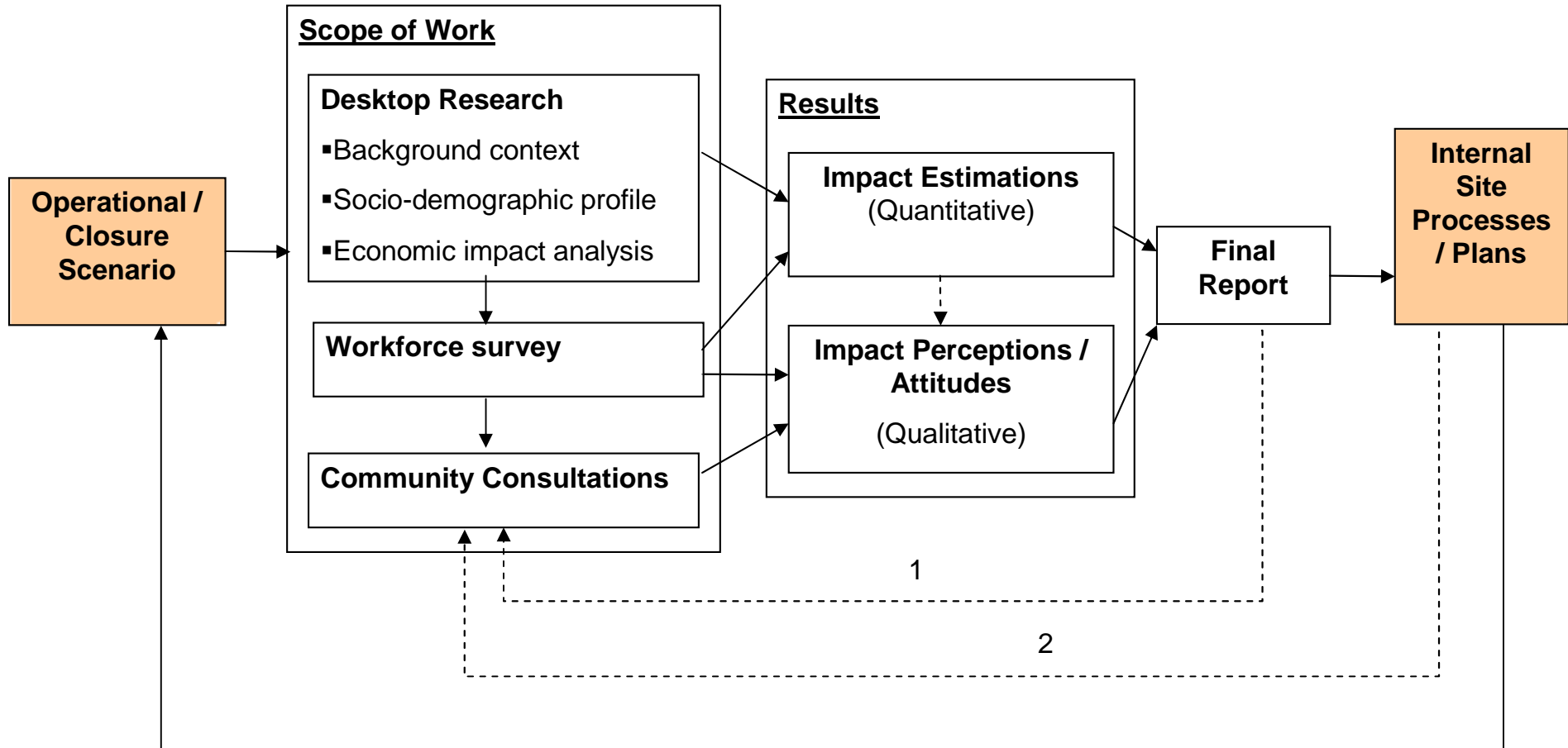
## SEIA – Sources

- > Different data sources, with:
  - Varying degrees of reliability and different levels of uncertainty
- > Uncertainty is irresolvable:
- > SEIA is not an exact science – at times more ‘back of the envelope’ exercise
- > But, still provides valuable information if well researched and consultative

# Part 2: Flow Chart



# Part 2: Flow Chart





## PART 3: Methods

1. Community consultation
2. Workforce survey
3. Economic analysis
4. Impact estimations



## Community consultation

- > Core of 40-50 interviews
- > Semi-structured interview protocol
- > Understanding perceptions essential to:
  - Manage expectations
  - Understand perceived impacts (relative to quant. estimations)
  - Respond to community needs and priorities



## Community consultation

- > Consultation is one tool, not the tool
- > Involvement of site personnel?
  - SEIAs usually external and independent
  - Anecdotal evidence suggests internal ownership limited
- > An alternative to ‘purist’ approach:
  - Involved company personnel in development of the report AND
  - Some discussions with community members
  - Interviewees still given a *genuine option* to refuse
  - Reports transparent about the approach used



## Desktop research

### > Socio-demographic profile

- Statistical picture of the area local to each of the mines
- Useful at a general level

### > Economic impact analysis

- Outsourced, specialist study
- Direct, indirect and induced contributions (economics and employment\*)



## Workforce survey

- > Data on workforce planning aspects + community impacts and opportunities
  - Focussed questions ...
- > Distributed by site personnel to all workers
  - Complete at work or in own time with several return options
  - 64% to 85% return rate\*
- > Timing:
  - Need to balance need to understand/plan, with ‘spooking’ workforce in times of low retention a challenge



## Estimating impacts

- > Calculations based on workforce survey data and related back to ABS data
- > Range of estimates
  - Conservative, mid, upper
- > Direct and indirect
  - Local workers + partners + kids
  - ‘Flow on’ workers



## Estimating impacts

- > Calculations were exploratory
- > Similar level of complexity for all calcs.
  - e.g. population
- > Findings appear simple, but loaded with assumptions
  - Transparency essential



## Conclusion

- > SEIAs for mine closure should be integral to mine closure planning
- > Integrated, not stand-alone exercise
- > Mine closure is one of the industry's toughest challenges + significant opportunity
- > Mines encouraged to:
  - Experiment with desktop estimation for SEIA aspects
  - Demonstrate transparency in calculations
  - Commit to an ongoing consultation process