Centre for Social Responsibility in Mining
1 November 2019

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA
CREATE CHANGE

A framework for the collection of social baseline data in mining

Citation

Owen, J.R and Kemp, D (2019) A framework for the collection of social baseline data in mining. Centre for Social Responsibility in Mining. University of Queensland. Brisbane.

Acknowledgements

The framework is adapted from Professor. John Burton's (1991) social mapping schematic as outlined in Burton, John E. 1991. 'Social mapping', in P. Larmour (ed.) *Customary land: Registration and decentralisation in Papua New Guinea*. Boroko: Institute of Applied Social and Economic Research. Monograph 29, pp. 191-213. We have adapted and modified Burton's original framework for use in a mining context. We would like to thank Professor Burton for his initial feedback on our usage.

Contents

Introduction **4**

Section 1: Layered framework for collecting social data **5**

Base plate: Study area 5

Layer 1: Physical (L1) 7

Layer 2: Social organisation (L2) 9

Layer 3: Demographic (L3) 11

Layer 4: Cadastral (L4) 13

Section 2: Worked examples **15**

Artisanal and small-scale mining 15

Changing land use 17

Resettlement 19

In-migration 21

Section 3: Business case for collecting social data **23**

Introduction

A key challenge for mining companies interested in collecting useful social data is identifying what needs to be known. International and corporate policies relating to social performance in mining are not specific or granular enough to account for the circumstances industry professionals are engaging with. Social performance professionals commonly face the problem of defining:

- what constitutes social data in mining
- what is required to collect that data
- how it should be used in operational-level decision-making.

Section 1 of this paper presents a conceptual framework for understanding the layered environment in which social impacts of mining can occur. The framework is not a 'total solution': it offers basic scaffolding for site-based personnel who may not be familiar with commissioning social baseline studies, and who have responsibility for building or utilising social data in their work. Section 2 includes worked examples using the framework. Section 3 includes a brief set of notes towards making a business case for collecting and using social data.

In this document, the framework is presented as having five (5) components. It begins with defining a study area, or area of interest as the "base plate" for the framework. This is then followed by four (4) thematic layers. The components are as follows:

- Study area (AOI)
- Layer 1: Physical (L1)
- Layer 2: Social Organisation (L2)
- Layer 3: Demographic (L3)
- Layer 4: Cadastral (L4).

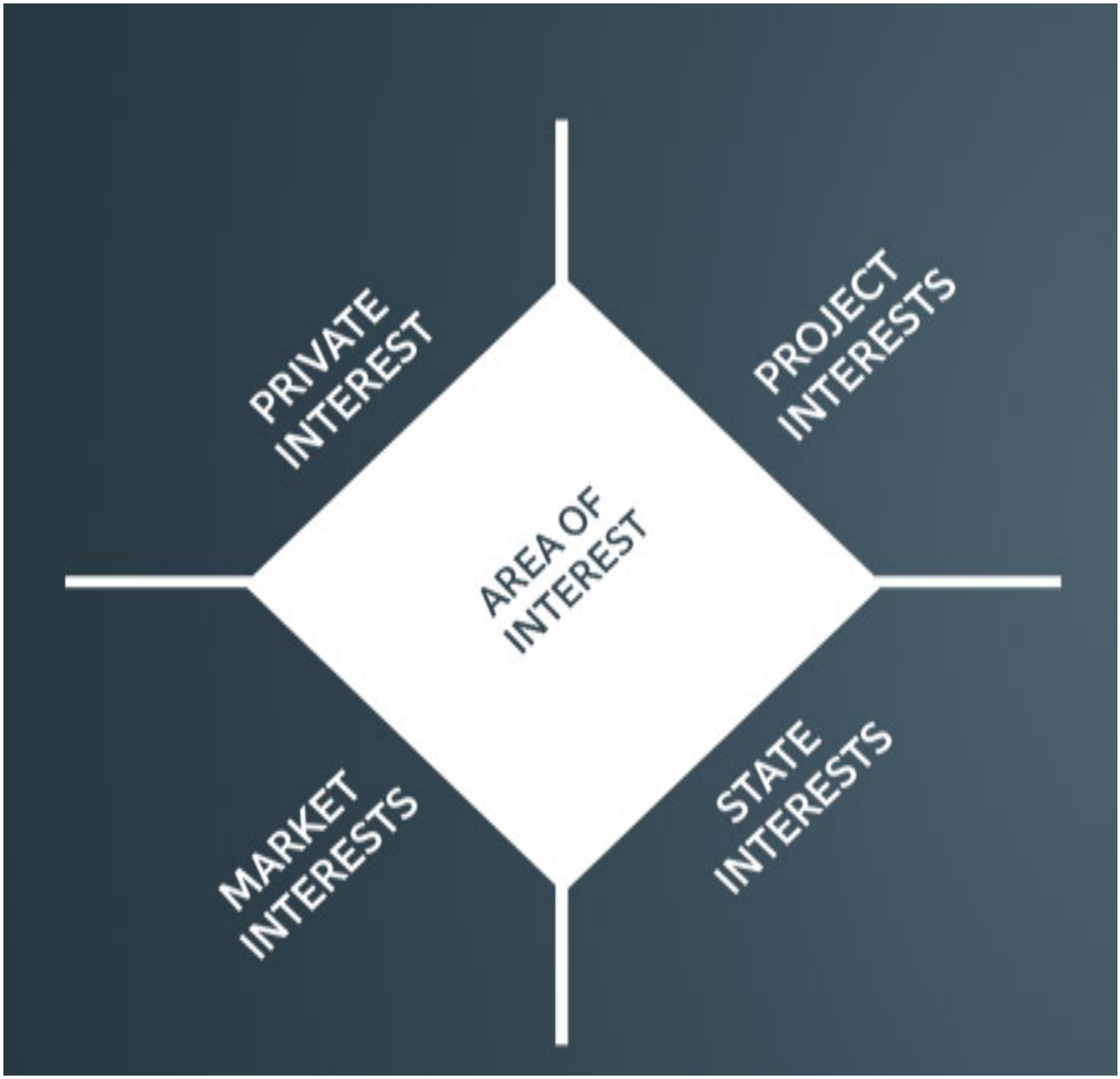
The layers are introduced in tables below. After presenting a visual aide, the table provides:

- a basic description of the layer
- the types of data that exist in that particular layer
- the various data collection methods and instruments that can be used
- the general purpose or utility of that layer.

The information in the tables is not exhaustive. It provided a basic orientation to the framework.

Section 1: Layered framework for collecting social data

Base plate: Study area



Defining the study area:

- Defining the base plate or the study area ensures that users of the framework deliberately identify the area or areas of interest for the project.
- Within these areas, recognise the different *interests* that apply to particular places
  These interests include: *market*, *corporate*, *state* and *private* interests.

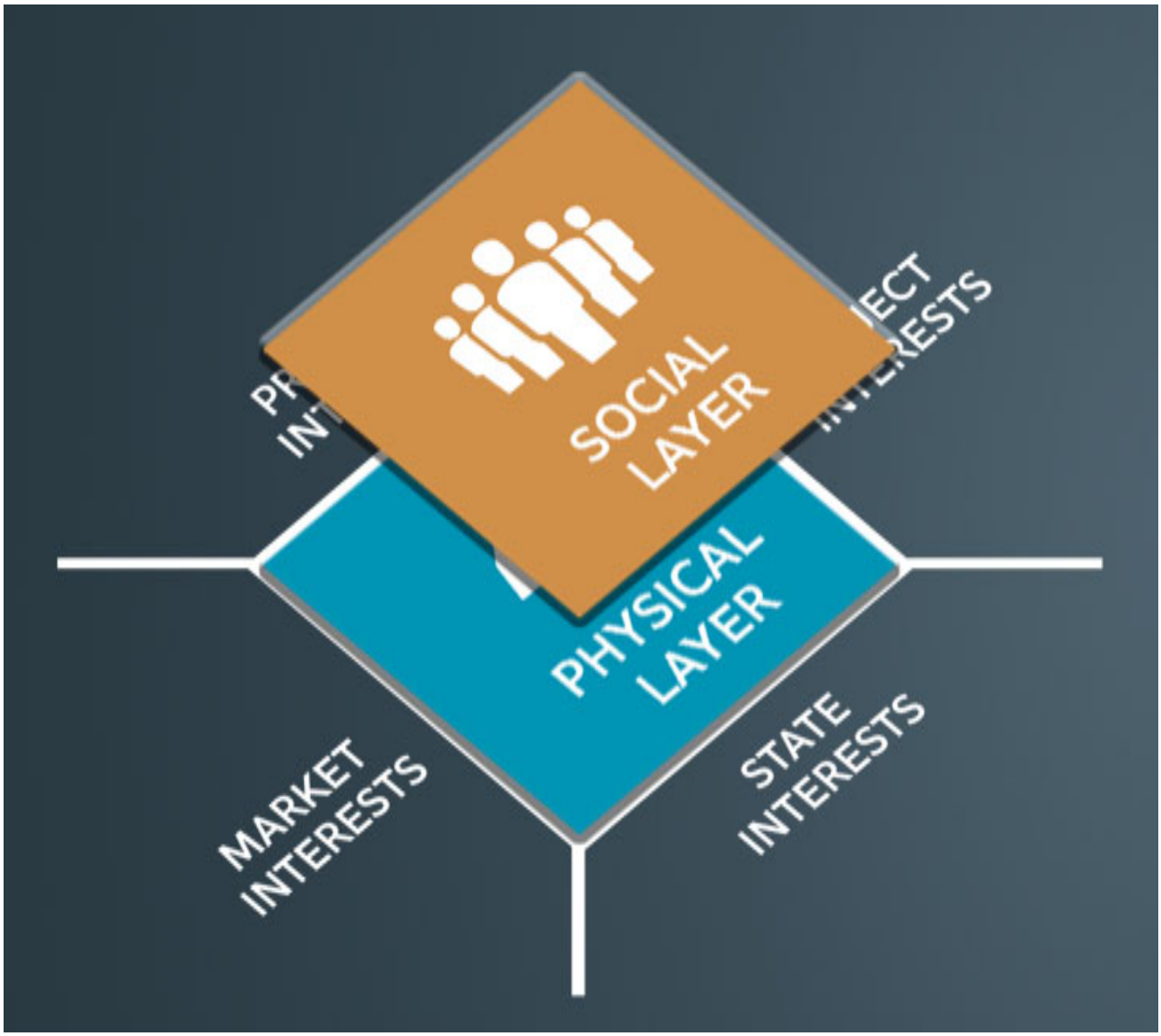
  The study area is that defined geographic area that is the focus of the work. The study area must be tied to a specified physical area.
- Over a project's lifecycle, and when looking at different parts of a mining complex, developers may need to work with multiple study areas. For instance, a mine pit may sit in one area, a processing or tailings storage facility in another, road corridors or shipping ports in another. Mining exploration may occur in other areas away from the existing mine complex.

Market interests	**State interests**
• The financial and commercial mechanisms of exchange and interaction that govern the AOI.	• Systems and functions of government, including education, security, health, judicial and legal systems.
Corporate interests	**Private interests**
• This reflects the developer's interests.	• Individuals and organisations with a commercial interest in the AOI (e.g. banks, small-scale businesses, ASM etc.) • Private interests include the collective property rights of tribal communities that may not be recognised by other parties.

Layer 1: Physical (L1)

Description:	
• Basic physical environment as it exists in the study area.	
Type of data:	**Methods/instruments:**
• Land form/topography • Hydrology • Geology and mineralisation • Land/soil types • Fauna/flora • Climate	• Internal project records • Surveying • Sampling (soil, water, air) • Mapping • Landsat images • Photographs • Fauna and flora inventories
General purpose/utility:	
• To define the natural resource base available to the project and the resident population in the AOI. • A foundation for exploration, environmental impact assessment, ecological services analysis, mine planning, and so forth.	

Layer 2: Social organisation (L2)

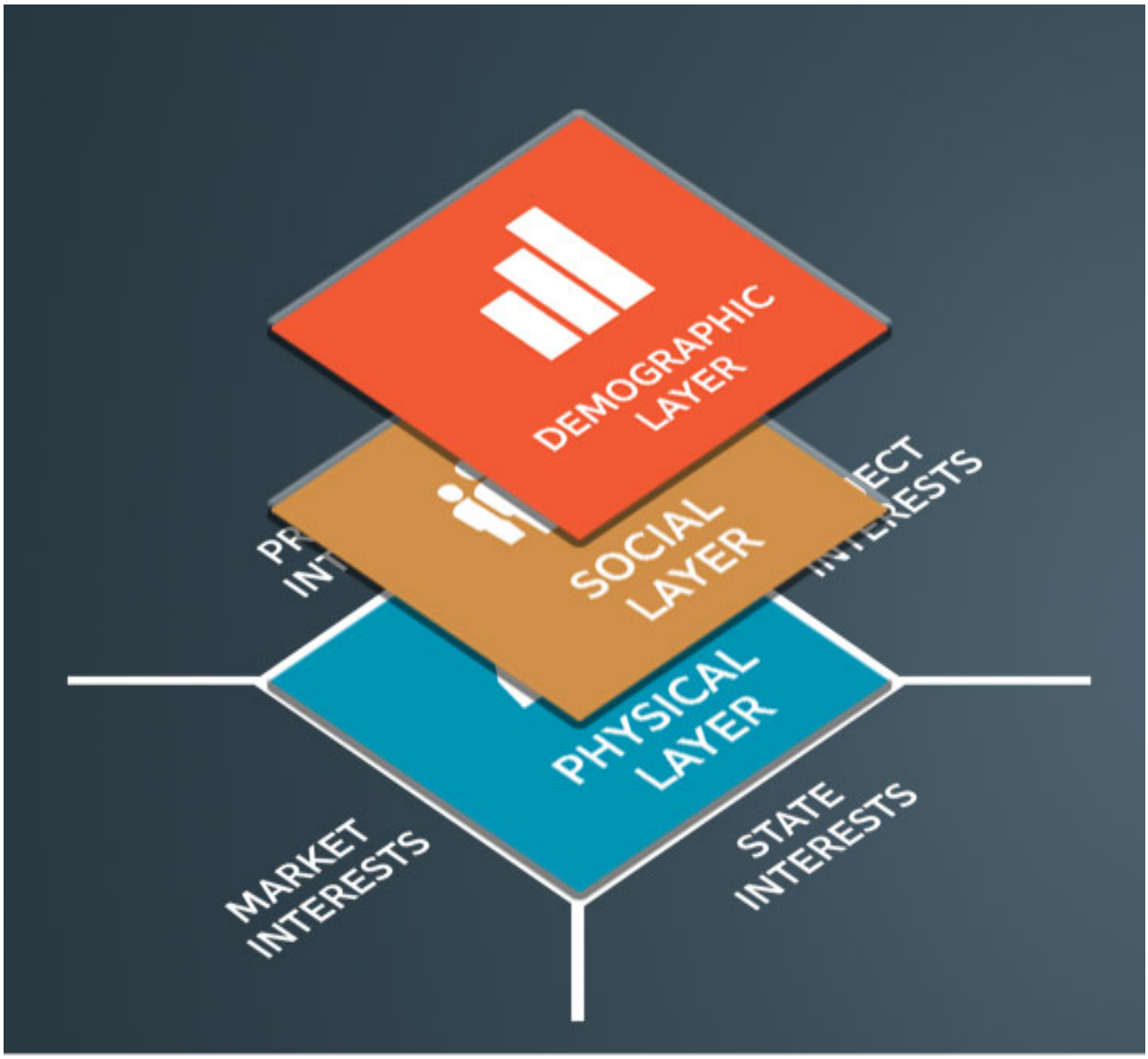


Description:	
• The social, cultural, political and spiritual systems, norms and rules that govern how people interact with the physical environment, and each other.	
Type of data:	**Methods/instruments:**

• Social organisation generally
• Kinship structures (relatedness)
• Social organisation within the family
• Household formation
• Customs, rituals, rites (births, deaths, marriages, etc.)
• Systems of authority
• Lineage systems (rules)
• Other entitlements around access to land and natural resources
	• Secondary sources
	  - prior studies commissioned by the project
	  - university studies
	  - NGO studies
	• Ethnographic methods: observation; participation and key informant interviews
	• Focus groups
	• Community meetings
	• Rapid appraisal techniques
	  - transect walks
	  - family maps
	• Sample genealogies/family structures (to determine linage rules)

General purpose/utility:	
• Understand the logic and practices that govern social authority in matters relating to representation, land and natural resource use. • Understand the basis upon which changes in population can or might be managed within the community (e.g. conflict, in-migration). • Understand the process through which ownership and/or use rights are transacted, including within or between generations (e.g. linage system). • Taken together, these are the basic foundations for understanding local perceptions of ‘rights’ and ‘entitlement’ for the population resident in the area of interest.	

Layer 3: Demographic (L3)

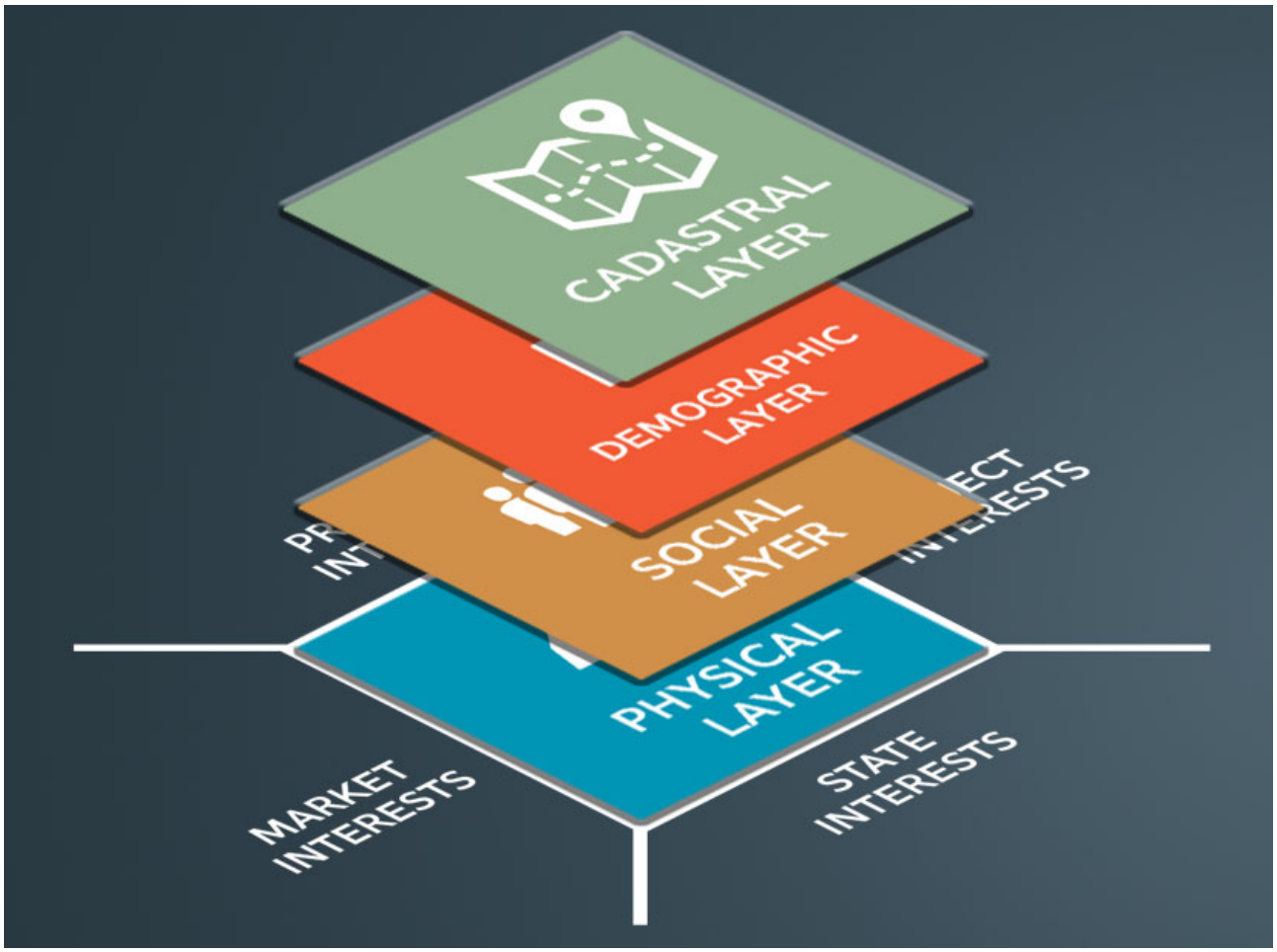


Description:	
• Information about the population living within AOI. This layer is most commonly surveyed to provide headcounts (census), and to identify patterns relating to socio-economic, health or other human activities or issues.	
Type of data:	**Methods/instruments:**

• Total population and migration patterns
• Ethnicity and language
• Residential information/family composition:
  - who lives where
  - in what numbers
  - in what groupings
  - how people are related
• Housing and amenities
• Livelihood strategies (including income and business activities)
• Food security
• Wealth, asset base and debt
• Resource and service use
• Education and health status
• Perceptions and attitudes
	• Secondary data analysis
	  - government census information
	  - university research studies
	  - other studies and surveys (e.g. registration forms for training)
	• Surveys/questionnaires
	  - broad-based/statistical sampling
	  - household-level surveys
	• Focus groups
	• Internal project records

General purpose/utility:	
• Census data/head count • Distribution of assets by population sub-groups • Understanding poverty context among sub-groups (households, villages, clans, etc.) • Understanding cause and prevalence of vulnerability risks • Projecting social change and responses to change with people in the AOI e.g. ability to cope with change (e.g. land dispossession, unemployment, restricted access to resources) • Establishing eligibility cut-offs (e.g. resettlement) • Estimates of compensation and categories (classes of eligible and ineligible persons)	

Layer 4: Cadastral (L4)



Description	
• Information on boundaries and values that demarcate formal, cultural or traditional rights over the ownership and use of land (i.e. land area and resource value).	
Type of data	**Methods/instruments:**

• Types of land tenure
  - Titled/untitled
  - Customary/state
  - Own/used
  - Individual/collective
• Land classification (e.g. forest, plantation, residential farming, fallow, grassland, conservation etc.)
• Landsat
• Land values (based on type and tenure).
• Productive values (e.g. schedule of rates for different types of crops, forest products, anything derived from the land)
• Laws, decrees, protocols and by-laws that relate to transacting in land.
	• Surveying, including boundary surveys
	• Land cover assessment
	• Land use change analysis
	• Land investigations
	• Market assessment of the value of land and agricultural products
	• Documentation on land transactions

General purpose/utility:	

• Approach to land access and acquisition (what is being accessed or acquired).
• Compensation assessments.
• Defining the rights of the developer, the rights of the land users, and the rights of landowners.
• Defining obligations, roles and rights of the state.
• Understanding the market conventions relating to land, and land-related products:
  - rules and norms relating to trading in land
  - rules and norms relating to pricing.
• Due diligence to determine past, present and/or potential for land use conflicts (e.g. land boundary disputes).	

Section 2: Worked examples

The following tables illustrate the types of questions that can be explored using the social data framework. Three issue areas are used as examples.

Artisanal and small-scale mining

A company may be looking to expand its activities into an area where artisanal mining is present. As part of its due diligence, a company would seek to understand how the activity is regulated by the resident population, how the resources are extracted, who participates and who benefits. If the company's activities are going to have a negative impact on this population and their livelihood, the company will need to know what these impacts are, who they will affect, and to what extent. Any future strategy surrounding engaging with these groups will be informed by this information.

Layer	Examples of questions
Study area	• *What is the area of interest?* • *Does this area overlap with an existing or proposed mining tenement?*
Layer 1: Physical	• Where in the AOI are ASM activities are taking place? • What resources are being drawn upon to support these activities (i.e. streams for dredging/washing) • Which routes are used to transport materials, trading points, and areas of residence for miners?
Layer 2: Social Organisation	• What is the ethnic and linguistic identity of the miners and the groups with whom they trade? • How are they connected to the customary owners of the land they are working and or living on? • What are the tenure arrangements for both the work and the residency?
Layer 3: Demographic	• What social units do people live in? • Which households are the miners attached to? • Are they living on their own as unaccompanied adults or are they living in family units (with partners, relatives and children as co-residents)? How long have they lived in the area? • What income do they derive from mining and mining-related activities; who and how much do they pay in order to undertake these activities? • What is the net balance to these individuals and how is that amount used? What are their living conditions in terms of housing and amenity? • What is the health and education profile of this group? • What other livelihood opportunities are available, if any?
Layer 4: Cadastral	• How does this activity intersect with the mine's lease area, or area of future interest? • What are the formal and informal arrangements in terms of ownership and rights to property in the area being used for ASM? • What is the legal status of this activity, in this area?

Changing land use

A company may seek to change its land use, or to change the way land is used by people in the community. To do this, the company must understand the land form, the land use, and who the land users are. Companies should understand both the legal context, and the customary processes surrounding land acquisition and land access. In doing its due diligence, the company will identify possible barriers to accessing or securing land, and will gather information for determining what types, and amounts, of compensation are due for people displaced by its activities.

Layer	Examples of questions
Study area	• *What is the area of interest?* • *Who has an interest in this change in land use?*
Layer 1: Physical	• What are the physical characteristics of the physical landscape? • What resources are available, and used? • Are there resources within the area that are reserved or restricted?
Layer 2: Social Organisation	• Is the company transacting with legitimate owners in a fashion that is aligned with the law and customs of the host society? • What are the different customary obligations over this land? • Is it even possible to change land use in this area? • What kind of customary processes might be required to change these arrangements?
Layer 3: Demographic	• Who currently lives in this area? • Who uses resources in this location? • What are the different categories of land owners and users? (Unless this is understood, there is a risk that companies will: compensate parties at the upper entitlement rate as owners; at the lower rate by treating land owners as land users, or randomly.) • Who could be affected by changes in land use and how?
Layer 4: Cadastral	• What kind of formal permits are in place? • What kind of customary entitlements are in place?

Resettlement

Different types of social data are required in order to plan for resettlement, and to understand the social risks involved for the resettling and the receiving community, and different groups within the community.

Layer	Examples of questions
Study area	• *What is the area of study?* • *Are both the displaced and receiving communities included in the scope of work?*
Layer 1: Physical	• What are the available physical resources in the resettling and the receiving community? • What is the carrying capacity of the land in both locations? • Which resources are scarce, or are necessary to avoid food, water or other kinds of insecurity?
Layer 2: Social Organisation	• What are the social rules governing categories of group membership? (This information explains the function and composition of social and kinship systems within the study area.) • What are the land entitlements (i.e., who can use what and where and for how long by applying which customary process)? • What are the eligibility and entitlement categories in this population? (A basic distinction is between land 'owners' and land 'users') • What is the most relevant social unit to survey and why (e.g., households, clans)?
Layer 3: Demographic	• Who lives here, and who is away and for what reason? • What is the composition of the household or most relevant social unit? • What are the household's assets (e.g. land, crops, physical structures, other capabilities) • What are the main sources of livelihoods in this location? • What are the primary demographic patterns in terms of vulnerability, health and education status?
Layer 4: Cadastral	• What is the quantum of land required for resettlement? • What is the quantum of land being lost? • What type of land is involved? • What are the means for determining replacement or acquisition costs for different types of land? • What are the boundaries, land area and formal acquisition procedures?

In-migration

Populations can swell rapidly in newly industrialised centres. Mining opportunities, along with basic services (even as basic as roads) attract migrants. Without quality social baseline data, it is difficult to project potential change, and understand how the population and the surrounding environment might adapt, and react. Influx management plans and systems are largely dependent on understanding how local authorities, including customary authorities, regulate land use and access to other resources.

Layer	Examples of questions
Study area	• *What is the area of study?*
Layer 1: Physical	• What physical resources does the current population rely on? • What resources are being put under pressure through in-migration?
Layer 2: Social Organisation	• How do existing social structures support or incorporate new arrivals (e.g. through marriage, adoption or custom)? • How these same structures can be used to restrict the movement of people into the community?
Layer 3: Demographic	• How is the composition of the population changing? • What kind of services are in place to support the population? • What kind of pressures is in-migration putting on what kind of services?
Layer 4: Cadastral	• What kind of land boundaries are in place to prevent and/or regulate potential informal settlements?

Section 3: Business case for collecting social data

There is a need throughout the industry to develop, and recognise, the business case for establishing a comprehensive social knowledge base for mining projects and operations. The table below outlines the multiple reasons for why companies should invest in improved social data.

Category	Rationale
Risk management	• For controls to be logical, predictable and effective they must be based on quality information and evidence. Defining risk should be an evidence-based process.
Crisis management	• The need for social data becomes clearest in a crisis. Crisis situations are not conducive to the collection of robust social data, but they are often the point at which social data is needed to inform conflict resolution strategies
Land Access	• Robust and reliable social data enhances the ability of all parties to understand the implications of land access and acquisition, and negotiate based on best available information.
Cost control	• The cost of collecting and incorporating social data into the planning and operational functions of the mine can be predicted and controlled. Conversely, the consequences of not having this information, or systems to offset unknown risks, cannot be predicted or controlled.
Track record	• What happens in the first in-country project has implications at additional sites in a region. This can work in the positive and the negative: - Future projects can benefited from some of the lessons learned and positive reputation built at earlier assets. - The company-community relationship at an earlier asset can negatively influence the way that stakeholders view the possible development of a future project.
Compliance	• Support compliance with regulatory requirements from home country, voluntary schemes and international policy frameworks.
Case Law	• Court judgements that make explicit reference to the need to collect social data for due diligence
Efficiency	• Avoid the inefficiency of plans and systems that are built on ad hoc knowledge and individual intuition.
Demand	• If it is not collected, demand for data is likely to come via conflict or arbitration. It is more cost effective (and far more logical) to collect data before being exposed.
Convenience	• The most difficult time to collect social data is when the relationship is under pressure. Pressurised timeframes inhibit accuracy and scope and will inevitably lead to deficiencies in the data and its application.
Assurance	• Given the significant monies that the industry spends on compensation, conflict resolution and social development, social data enables monitoring, auditing and assurance.

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

CREATE CHANGE

Contact details

Professor John Owen
T +61 7 3443 4066
E j.owen@uq.edu.au
W smi.uq.edu.au

CRICOS Provider Number 00025B