



Resource Endowment Toolkit

The Challenge of Mineral Wealth:
using resource endowments to foster
sustainable development

April 2006



Assessing the socio-economic
impact of mining

A stylized world map with a grid of latitude and longitude lines. The map is rendered in a light green color. Four small red squares are placed on the map to indicate specific mining locations: one in South America (Brazil), one in Africa (South Africa), one in Africa (DRC), and one in Southeast Asia (Indonesia). The map is positioned above a blue and white textured background that resembles a close-up of a mineral surface.

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Preface

In the past five years, the economic, social and environmental dimensions of mining and minerals have been the subject of wide-ranging consultation, critical comment, research and analysis. The Mining Minerals and Sustainable Development Project (MMSD) and Extractive Industries Review (EIR) respond to the unprecedented focus of public attention on the sustainable development challenges for extractives in general and mining in particular.

In May 2004, ICMM¹ initiated its Resource Endowment² initiative³ to better understand how large scale mining activity in low and middle income countries can enhance the socio-economic development of host countries. The initiative aims to isolate the drivers of development effectiveness in the mining and metals sector and to document the policy frameworks, operational practices, and partnership arrangements that deliver sustainable outcomes on the ground. This action-research project is being done together with UNCTAD and the World Bank Group. ICMM also consulted stakeholders such as mining companies, governments, donor agencies, labor and non-governmental organizations (NGOs).

Much of the 'resource curse' literature has focused on problems rather than solutions. Consequently it is not of much practical help in designing improved policy or filling gaps in knowledge. For example, how have apparently 'successful' countries avoided problems now so widely perceived? Can such outcomes be repeated in other developing economies endowed with an abundance of mineral resources? How should the main stakeholders work together to enhance positive socio-economic outcomes from mining investments?

To help bridge these gaps, some of the specific questions the Resource Endowment initiative attempts to address are:

- How the mining sector overall contributes to national development?
- What strategies have been effective in managing revenues generated by natural resources for sustainable development and poverty reduction?
- How an individual mining project contributes to development at national, regional and local levels?
- What are the practical and policy implications for mining companies, host country governments, development institutions, and NGOs?
- What might the distinct responsibilities of these development partners be to support implementation of findings and recommendations?

The three distinct phases of the initiative and related products are outlined below.

Phase 1: Analytical Framework and Tools

The initial phase of the project concentrated on the development of an analytical framework focussing on governance processes, including the underlying factors and rules of the game that affect social and economic interactions and outcomes. These aspects were incorporated into a practical toolkit to assess local, regional and national socio-economic impacts of mining. The toolkit also deals with how mining operations impact on governance structures, institutions and policy changes at different levels of government. Phase 1 involved an extensive literature review, and a 'coarse-sift' comparative analysis of the relative economic and social well-being of 33 countries with a high dependence on minerals. Initial findings were critiqued in a multi-stakeholder workshop which helped to shape a revised approach.

Phase 1 Published reports:

- Analytical Framework: Executive summary
- Resource Endowment Toolkit.

Phase 1 Additional Online Resources:

- Analytical Framework: Main Report
- Literature Review
- November 2004 Workshop proceedings.

¹ The International Council on Mining and Metals.

² The Challenge of Mineral Wealth: using resource endowments to foster sustainable development.

³ The initiative is managed by Kathryn McPhail, Principal, ICMM.

Phase 2: Testing, Synthesis and Emerging Lessons

This involved applying the toolkit to two main and two comparator countries, Peru (with Chile as a comparator) and Ghana (with Tanzania as a comparator). In all four countries, mining had shown some evidence of having successfully contributed to economic and social improvements. The purpose was to test the toolkit, to assess whether it could be applied to a broader set of mining countries, and to propose refinements. The findings were reviewed by a second multi-stakeholder workshop which provided valuable feedback.

Phase 2 Published reports:

- Four country case study executive summaries
- Synthesis report of findings of the four case studies.

Phase 2 Additional Online Resources:

- Ghana, Tanzania, Peru and Chile country case studies
- October 2005 Workshop proceedings.

In addition, a number of other publications summarize the process or findings of both Phases 1 and 2, and signal ICMM's approach to Phase 3:

- A Spotlight series that summarizes key aspects of Phases 1 and 2 (The Prize; The Challenge; Ways Forward; and Process and Feedback)
- Resource Endowment Guide to Phases 1, 2 and 3.

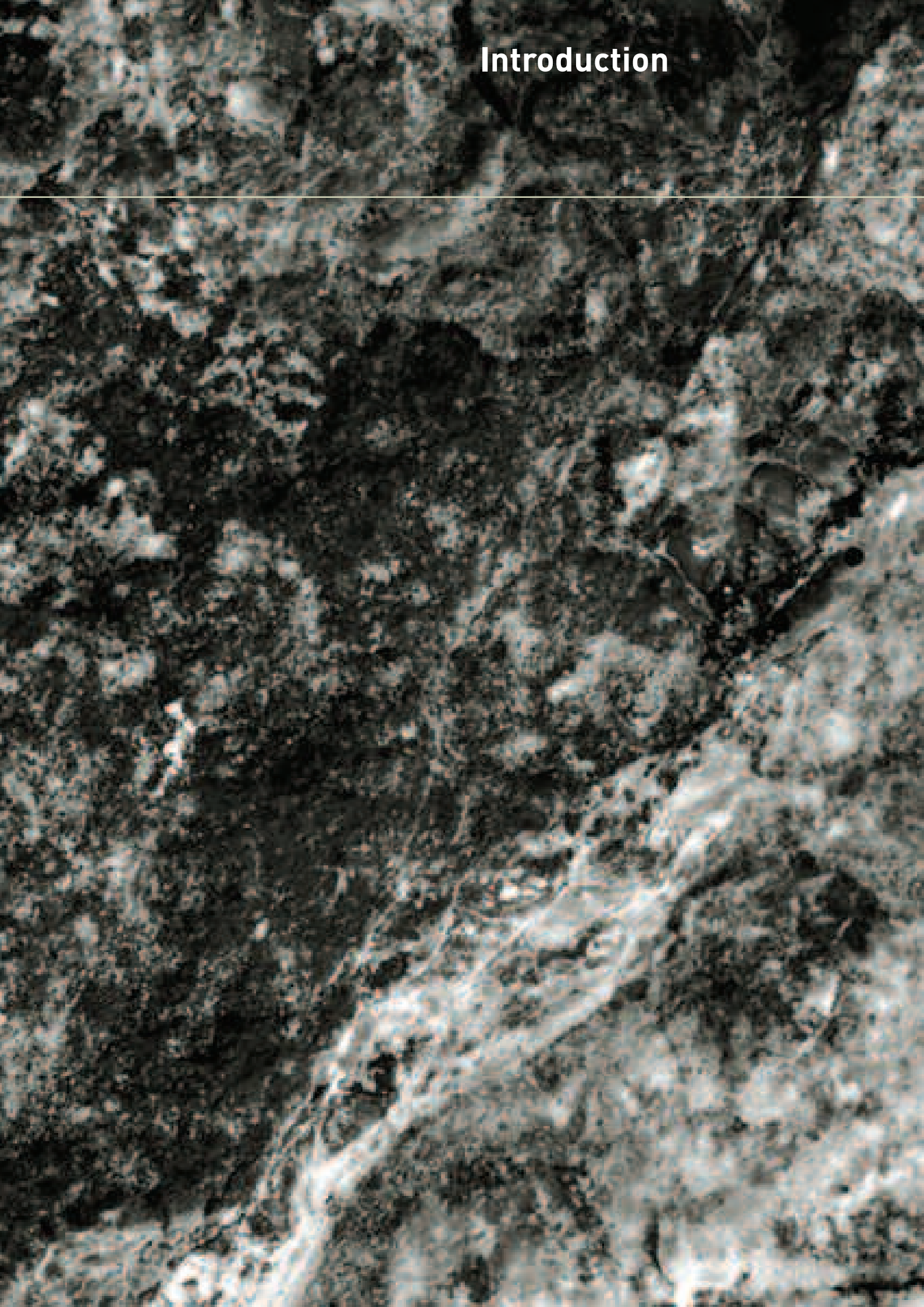
Phase 3: Action Learning through Partnerships

The activities of Phase 3 will include a number of 'pilot projects' in partnership with others to encourage uptake of the Phase 2 recommendations and, as a consequence, enhance the contribution of mining to social and economic development. Phase 3 will also focus on dissemination and outreach.

For the latest information on Phase 3, including details of pilot activities and partners visit www.icmm.com

'to better understand how large scale mining activity in low and middle income countries can enhance the socio-economic development of host countries.'

Introduction



Introduction

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Scope of the Methodology

The objective of the methodology presented in this document is to develop an overview of the impacts that mining projects and industries have on their host communities and countries. The objective is *not* a methodology for ex-ante social *impact assessment*, which is a much more detailed and lengthy process.

The methodology has been designed to enable mining companies and other stakeholders in the mining industry to prepare their own assessments, in addition to those that have already been prepared for the Resource Endowment initiative. This has meant that the assessment approaches proposed, wherever possible, have been kept simple⁴. There is a range of techniques that can be used to estimate economic and socio-economic impacts, from qualitative approaches through to complex econometric modeling. The methodology outlined in this document seeks to strike a balance to ensure that:

- there are opportunities for *qualitative* stakeholder inputs into the assessment;
- assessments can be undertaken even when the availability or quality of socio-economic data, or the resources available, would not support econometric approaches (as will typically be the case);
- robust, comparable and quantifiable case studies are produced to support the overall aims of the Resource Endowment initiative, and more broadly inform the debate about the positive and negative impacts of mining projects;
- mining companies and/or their stakeholders can produce their own studies, primarily with in-house resources; and
- non-economist readers can understand and debate the methodologies used.

‘methodologies have been adopted that will produce both qualitative and quantitative impact assessments, without using ‘black box’ econometric approaches.’

Therefore, methodologies have been adopted that will produce both qualitative and quantitative impact assessments, without using ‘black box’ econometric approaches. However, all the approaches used are robust, and are used extensively elsewhere for socio-economic impact work by a variety of public, private and international agencies.

It is anticipated that the time taken for the assessment methodology described in this paper should be about 50 to 80 person days, depending on the complexity of the context and the experience of the analysts. If only local elements of the toolkit are addressed (that is, excluding the macro-level analysis), a time input of 30 to 40 days should be allowed.

General Tasks Necessary for Impact Assessment

When preparing the impact assessments a range of tasks may be required, including:

- consultations;
- data collection (both primary and secondary); and
- economic and socio-economic analysis.

A wide range of stakeholders should be consulted. This is because impact assessments that are undertaken without stakeholder consultations often lack credibility – partly because not consulting stakeholders raises suspicions, but also because they will typically have interesting and valuable insights into both local conditions

⁴ Stage 6 of the toolkit takes us into areas where the linkages between mining company activity and socio-economic performance are inherently difficult to define in precise mechanical ways. Thus the methodology in that stage of the work will necessarily involve rather more complexity.

and the impacts of the mine. In particular, many of the opportunities to improve the performance of the mine with respect to socio-economic impacts will only become clear after discussions with stakeholders (for example, procurement policies that may inadvertently exclude some local suppliers).

Whilst the exact scope of consultations will be location specific, every effort should be made to liaise with a representative sample of groups, including those that have been critical of mine performance, from the following broad category of stakeholders:

- mine employees and their representatives (for example labor unions);
- community liaison panels and other community or civil society representatives (these should be representative of the local community in terms of gender, ethnicity, religion, language, culture, place of origin, residential location, age etc);
- suppliers to the mine;
- other local businesses (possibly via chambers of commerce);
- development agencies active in the area, including domestic and international charities and national government agencies;
- any international financial institutions (for example, World Bank) or bilateral aid agencies (for example, USAID, UK Department for International Development and the European Union's external aid program);
- local, regional and national government authorities; and
- health, education and other service providers.

As well as collecting and validating information, the stakeholder consultations will be important in developing an understanding of the more qualitative aspects of the assessment, such as:

- the quality of stakeholder engagement undertaken by the mine;
- the responsiveness of the mine's management to community concerns;
- the extent to which positive and negative impacts are distributed equitably amongst different stakeholder groups;
- the approaches taken by the mine when engaging with or helping to develop the community – those that work, and those that don't;

- the nature of interactions between the mine and public agencies, and the extent to which these may impact on the quality or quantity of public services; and
- the positive and negative impacts on local businesses of introducing modern business practices.

The Assessment Methodology: Key Stages

The remaining sections of this document present the proposed assessment methodology by stage. The aim is to present a standardized approach to assessment. However, each assessment will be different because of differing local circumstances and issues, and therefore the emphasis placed on different elements of the methodology will naturally differ.

The key stages can be seen as a listing of the main steps to be taken in implementing country case studies designed to throw light on the social and economic impacts of large mining projects. All the component items in the listing are taken from the two specialist reports presented to stakeholders at a November 2004 workshop held in London⁵.

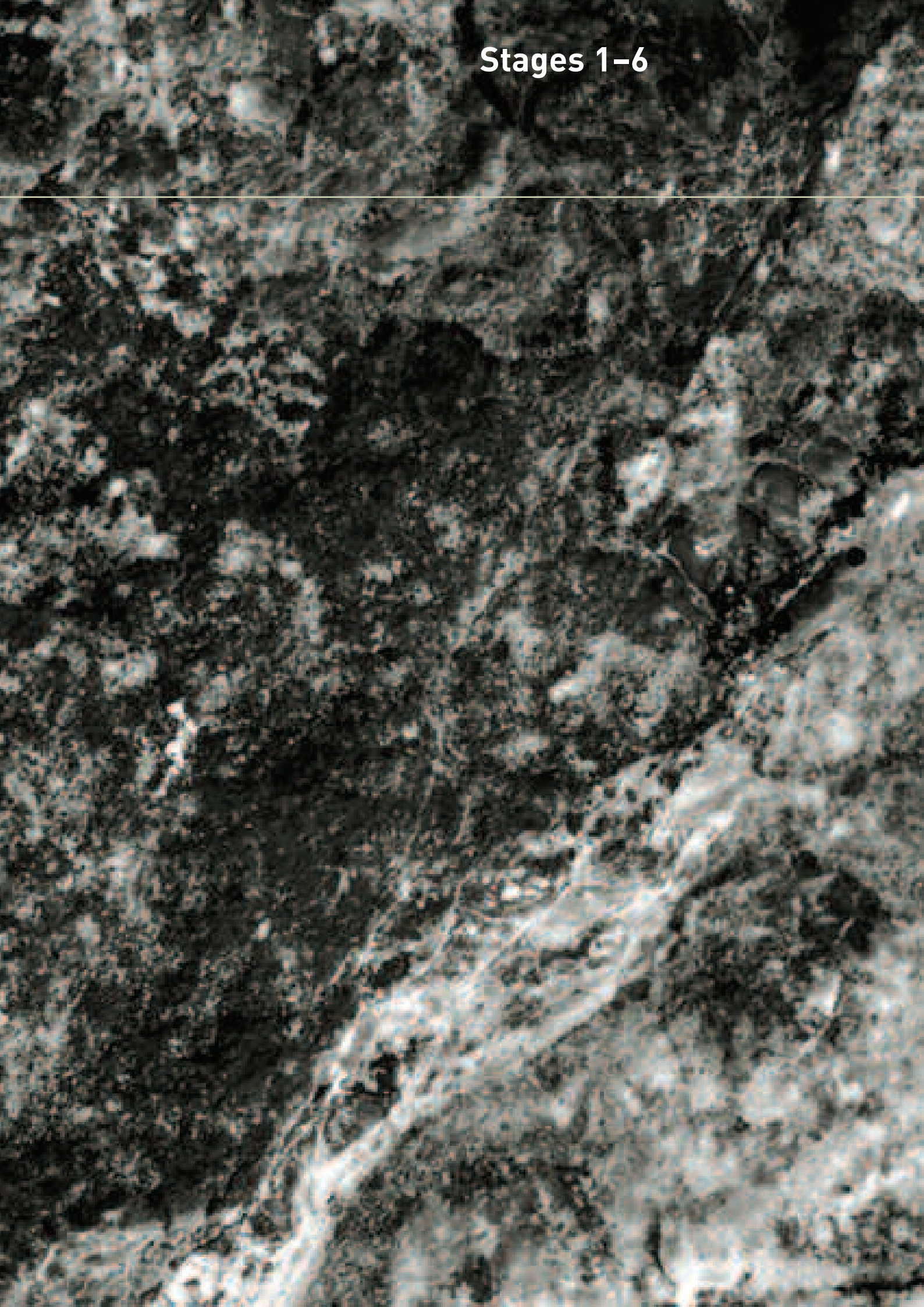
The tools to be used are listed as six distinct Stages (tasks) that are each clearly defined, and so capable of being delegated to individuals in the case study teams. A significant part of the work can be done as desk-based work, but a major element will require meetings, data gathering and analysis in the target countries.

The methodology embraces various types of content including descriptions of the country context and the country economic and social performance; descriptions of the mining activity(ies) to be assessed; in-depth micro-level assessment of the impact of the mining activity(ies); and a selective assessment of the impacts of those activities on macroeconomic performance and the quality of the country's system of governance defined in broad terms.

⁵ Oxford Policy Management. *Using resource endowments to foster sustainable development: How to enhance the socio-economic contribution of the mining and metals sector?* A draft study for the International Council on Mining and Metals (ICMM), November 2004 and Environmental Resources Management, *A Framework for Measuring the Local Socio-economic Impacts of Mining Operations*, draft, November 2004.

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- 6 The key stages can be summarized as follows:
- define country context;
 - profile the mining activity(ies) to be assessed;
 - document country economic and social performance/outcomes;
 - assess the proximate causes of outcomes;
 - assess the project/micro impacts of the mining activity(ies); and
 - assess the broader (macro/governance) causes of performance.

Stages 1-6



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Description of Country Context

Stage 1 should provide a brief (one page) description of the country's size, situation, and recent history, and its main political and economic parameters. It is intended merely to provide background for the more in-depth analysis that follows.

Profile of the Operation(s)

Provide here a brief (1-2 page) overview of the operation(s) to be assessed, detailing:

- location, including the area occupied by the mine and its previous use;
- date of development and projected remaining mine life;
- nature and volume of commodity produced;
- annual turnover and main markets;
- mining techniques used: open pit or underground, and waste and tailing arrangements;
- planned capital investments;
- similar information for other local mines (in the broad region of the mine under study);
- recent/planned mine closures in that same area or nationally;
- number of employees and how many expatriates.

Stage 3

Measuring Economic and Social Outcomes

This measurement of social and economic outcomes should be divided into two parts:

- economic growth; and
- poverty alleviation and related social development.

3.1 Economic Growth

Economic growth should be measured by examining standard national income data on two variables, namely:

- the growth rate of Gross Domestic Product (GDP); and
- the growth rate of non-Mineral GDP.

Data on these variables can be extracted from the World Bank's World Development Indicators (WDI, which are available on-line at www.worldbank.org). The data should be assembled for as long a run of years as is possible and should certainly embrace the period of operation of the mine. (NB. This is not easily done for very new mines, where the link between mining performance and outcomes over a long time period will obviously be non-existent). In the event that data periods are too short, they should be supplemented with country level data obtained during field visits (normally from the national central bank or statistics agency).

3.2 Poverty Alleviation and Related Social Development

This element can be measured with reference to the Millennium Development Goals (MDGs). There is a range of variables, organized around the agreed aggregates, which are now accepted as the agreed international basis for monitoring progress against the MDGs. These are summarized in Table 1. For most countries the relevant indicator tables can be extracted most readily from the UNDP web site at www.undp.org⁶

Because the monitoring of the MDGs is a quite recent activity, it may be necessary in some cases to obtain data for earlier years by reference to either World Bank data (as in the WDI) or country data to be obtained from local statistical offices. In many lower income countries, there are now in-country monitoring systems in place (including

some specialized surveys) that should be available to enrich the general data available from international database.

Other useful sources of data can be household level income and poverty surveys, and surveys undertaken as a result of development projects or programs, or as a result of Social Impact Assessment studies for major investment projects.

The case studies will also need to enquire into the outcomes of a sub-set of these indicators at the lower levels of government (regional and local). This aspect of the toolkit is referred to separately in the Stage 5 discussion below.

The **presentation of results** should be done with reference to performance of the target country vis-à-vis certain relevant comparator countries (countries in the same geographical region or in the same World Bank income group).

⁶ From the home page, the selection of 'Statistics' followed by 'Get Data' will take you to all the data tables shown in the most recent Human Development Report (HDR). These can be downloaded for further analysis in the MS-Excel format. Other individualized data sets can be constructed by choosing (i) countries and (ii) indicator. The same 'Get Data' page also provides an electronic link to the Development Goals. These show the monitorable data series listed in Table 1.

Table 1: Millennium Development Goals (MDGs)

Goals and Targets	Indicators
Goal 1: Eradicate extreme poverty and hunger	
Target 1: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day	Proportion of population below \$1 per day Poverty gap ratio (incidence x depth of poverty) Share of poorest quintile in national consumption
Target 2: Halve, between 1990 and 2015, the proportion of people who suffer from hunger	Prevalence of underweight children (under-five years of age) Proportion of population below minimum level of dietary energy consumption
Goal 2: Achieve universal primary education	
Target 3: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling	Net enrolment ratio in primary education Proportion of pupils starting grade 1 who reach grade 5 Literacy rate of 15-24 year olds
Goal 3: Promote gender equality and empower women	
Target 4: Eliminate gender disparity in primary and secondary education preferably by 2005 and to all levels of education no later than 2015	Ratio of girls to boys in primary, secondary and tertiary education Ratio of literate females to males of 15-24 year olds Share of women in wage employment in the non-agricultural sector Proportion of seats held by women in national parliament
Goal 4: Reduce child mortality	
Target 5: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	Under-five mortality rate Infant mortality rate Proportion of 1 year old children immunized against measles
Goal 5: Improve maternal health	
Target 6: Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio	Maternal mortality ratio Proportion of births attended by skilled health personnel
Goal 6: Combat HIV/AIDS, malaria and other diseases	
Target 7: Have halted by 2015, and begun to reverse, the spread of HIV/AIDS	HIV prevalence among 15-24 year old pregnant women Contraceptive prevalence rate Number of children orphaned by HIV/AIDS
Target 8: Have halted by 2015, and begun to reverse, the incidence of malaria and other major diseases	Prevalence and death rates associated with malaria Proportion of population in malaria risk areas using effective malaria prevention and treatment measures Prevalence and death rates associated with tuberculosis Proportion of TB cases detected and cured under DOTS (Directly Observed Treatment Short Course)
Goal 7: Ensure environmental sustainability	
Target 9: Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources	Proportion of land area covered by forest Land area protected to maintain biological diversity GDP per unit of energy use (as proxy for energy efficiency) Carbon dioxide emissions (per capita) (Plus two figures of global atmospheric pollution: ozone depletion and the accumulation of global warming gases)
Target 10: Halve, by 2015, the proportion of people without sustainable access to safe drinking water	Proportion of population with sustainable access to an improved water source
Target 11: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers	Proportion of people with access to improved sanitation Proportion of people with access to secure tenure (Urban/rural disaggregation of several of the above indicators may be relevant for monitoring improvement in the lives of slum dwellers)

Assessing Proximate causes of Outcomes

Stage 4 involves assessing proximate influences that have shaped outcomes at the national/macro level. The assessment has two sub-components. In both cases the main aim is to describe the influences in a coherent and standardized manner and not to analyze the factors that give rise to these proximate causes (that analysis comes later as Stage 6 in the toolkit). The two components are:

- the quality of the country's Governance; and
- the quality of its Macroeconomic Management.

4.1 Governance

In the initial screening of the 33 countries presented in the Analytical Framework: Main Report (Chapter 3), the six composite World Bank *Governance Indicators* were used. These indicators are compiled on the basis of grouping several hundred individual variables measuring perceptions of governance drawn from 25 separate data sources and constructed by 18 different organizations into six governance dimensions:

These six core indicators are:

- voice and accountability;
- political instability and violence;
- government effectiveness;
- size of regulatory burden;
- rule of law; and
- control of corruption.

These six indicators should form the basis for this part of the case-study work because (i) they are now routinely made public by the World Bank (for years since 1996), and (ii) they provide a somewhat more objective basis than do more general indicators such as the World Bank's Country Policy and Institutional Assessment (where data on component indicators are kept confidential). See Annex B for details of data sources.

From the point of view of the country case studies, the following key institutional aspects of governance structures could also be relevant:

- general features of the political and administrative system;
- general features of the legislature;
- extent of federalism/devolution of powers; and
- electoral rules.

In addition, case study researchers should be aware of other possible indicators of governance that may be available for particular target countries. One example is the set of indicators being developed by the *Access Initiative* and

available for some countries at (www.theaccessinitiative.org)

It is emphasized again that these indicators by themselves seem unlikely to lead us to the fundamental explanations for good or bad country performance. They are incorporated here to help guide researchers to important issues that can then be analyzed in more depth in later stages of the toolkit (see especially Stage 6). These will include important differences at national versus regional levels. However, even in the absence of that further analysis, they are a useful part of the risk assessment of countries that case study researchers (and mining companies) need to consult and document.

The **presentation of results** on this component should focus mainly on the narrative discussion. The numerical indicators referred to above can be used to illustrate that discussion. Wherever possible, changes and trends over time should be highlighted, as should particular aspects of governance that are most likely to directly affect the economic and social impacts of mining investments.

In cases where the political institutions data reveal particular angles that could impact directly on the benefits of mining activity (for example strong disconnects between regional and national governments or serious ethnic dimensions in the control of key institutions), these should be highlighted at this stage to inform the more in-depth analysis in Stage 6.

Technical problems render it difficult to robustly compare the governance indicators across countries. However, comparisons with relevant comparator countries should be undertaken if only to show whether the target country is a serious outlier in relation to standards of 'good governance'. These numerical comparisons will have somewhat less relevance when the target country is very similar in its governance performance to many other countries.

4.2 Macroeconomic Management

The purpose here is to:

- Assess the general quality of a country's management of its macroeconomic situation and pinpoint aspects of this that could either magnify or diminish the broad economic benefits expected from mining.

- Document elements of macroeconomic management that may have been impacted (negatively or positively) by the presence of a large mining activity. To these ends standard economic indicators of the type that are used in IMF Article 4 and other standard assessments of country macroeconomic performance need to be assembled and analyzed.

Seven main indicators should be examined, namely:

- The real exchange rate (if shown in *International Financial Statistics (IFS)* and otherwise computed by adjusting the movements of the nominal exchange rate for domestic inflation);
- The fiscal deficit as a percentage of GDP;
- Inflation (either the consumer or the wholesale price index or both where data permit);
- The trends and *variability* of total budgetary revenues (it is not easy to obtain consistent long run data on mineral royalties and taxes alone but these should also be compiled where available). This provides a broad indication of the degree of uncertainty that has been associated with fiscal management. It can be supplemented by data about the variability of metal prices;
- The trends and *variability* of the export revenues of the country and especially that part of the variability that can be associated with mineral exports. This provides an indication of the uncertainty of foreign exchange availability associated with mining activity;
- The trends and *variability* of the direct and portfolio capital flows into the country and especially that part of the variability that can be associated with mining investments; This provides an indication of the uncertainty of foreign exchange availability associated with mining activity;
- The share of the private and public sectors in total credit allocations – a proxy indicator of the size of the state in the overall economy.

The case studies should compile time series on these indicators or elaborate them as necessary to bring out more of the underlying links between the various aspects of the country's macroeconomic policy stance, the presence of mining, and the socio-economic outcomes that are observed on the ground. The data should be assembled for as long a run of years as is possible, and should embrace the period of operation of the mine. This is possible using IFS data for many years back to 1950. These data are available electronically via a

'The case studies should compile time series on these indicators to bring out more of the underlying links between the various aspects of the country's macroeconomic policy stance, the presence of mining, and the socio-economic outcomes that are observed on the ground.'

subscription to IFS (or for most academically based researchers via www.esds.com). In the event of there being gaps in the data series, these should be filled where possible by reference to the national sources that can be obtained during field visits⁷.

The **presentation of results** on this component should again focus mainly on the narrative discussion. The numerical indicators referred to above can be used to illustrate that discussion and highlight major tendencies and changes at certain points in time. Tendencies over time (improvements and deterioration) should be highlighted as should particular aspects of macroeconomic management that are most likely to directly affect the economic and social impacts coming from mining investments. The case study researchers should look explicitly for changes in the conduct of macro policy that might reasonably be attributed to the presence of a new mining activity or the expansion of an existing activity.

⁷ See, for example, the time series data at <http://www.theworldeconomy.org/publications/worldeconomy/>

Stage 5

A Detailed Assessment of the Project Level Impacts

5.1 Stakeholder Interviews

This first part of the in-depth assessment of project impacts is designed to provide some structure to stakeholder interviews to ensure that local communities (in different areas and countries) are asked a similar range of questions. However, there will also be many additional questions that are relevant to each operation, and so the types of issues to address should be seen as a starting point for stakeholder interviews, not a definitive list of questions. As will be seen from the suggested questions in Table 2, not all questions will be relevant to all stakeholders.

5.2 Employment and Dependents

Overview

One of the most visible economic impacts of mining operations on a community is the employment that it generates. Employment is generated through the creation of jobs within the mining operation itself, for instance during the exploration, mining and closure/rehabilitation phases. These jobs are *directly* related to the mining operation. However, there are jobs created outside of the 'gates' of a mining operation. These are a result of the building of roadways to reach the mine, the construction of new homes for miners and their families, and the businesses required to service the families for instance.

The objective in this section is to calculate the total employment generated by the operation. This includes:

- *Direct employment* by the operation (staff on the payroll). If there are headquarters staff (or other staff employed in management functions off-site) employed within the country, then these employees should also be included;
- *Indirect employment* in the region comprising:
 - Contractor employees working for the operation (staff on the contractor's payrolls who are employed to fulfill contracts at the operation);
 - Indirect employment working at the operation's suppliers and any contractor's suppliers or contractors;
- Employment generated in the region by *social investment* and *provision activities*, including local business development; and
- *Induced employment* in local communities generated by the spending of direct and indirect employees, such as those in local services (for example shops, transport and public services).

Detailed guidance on how to calculate each of these elements is provided in Section A1 in Annex A.

Time Frame and Major Capital Expenditure Projects

Whilst it may only be possible to get accurate estimates for the current year, attempts should be made to describe how employment has changed in recent years, and how it is expected that it will change in the future. Therefore, seek to get employment estimates for ten and five years ago, and forecasts for employment in five and ten years' time (even if these estimates are less accurate than for the current year).

Also, if there has been major capital expenditure in recent years (for example associated with mine extensions), this should be noted and, if known, the approximate number of temporary construction jobs that were created should be included. This is because construction activities can sometimes generate more employment than the operational phases.

Local versus National Employment

At many mines, there is substantial inward commuting amongst the workforce. Therefore, when calculating employment, try to estimate the number of jobs that are local.

The definition of local should relate to where workers have their permanent home and their families. Therefore, if workers have migrated to the area with their families they should be considered to be local, whereas if they commute and stay in mine hostels or other accommodation they should not be considered to be local.

The definition of local will vary markedly from country to country and from community to community. For example, in some densely populated areas where mobility is limited, 'local' may refer to distances of just a few kilometers, whereas in remote areas where mobility is high (such as in the Australian Outback), 'local' may cover communities over 100 km away. Therefore, a definition of local that is appropriate in the mine's context should be adopted.

Table 2: Stakeholder Questions

Demographic and social change
<p>Has the population level or make-up of the population (eg gender, ethnicity, religion, language, culture, place of origin, residential location, age etc) changed over time because of the mine?</p> <ul style="list-style-type: none"> • If so, have there been positive or negative impacts as a result of this change? Positive impacts may include more jobs, better services supported by a bigger population and higher standards of living. Negative impacts may include communal tensions, crime levels, overcrowding and/or excessive demands on local services. • Has the mine attempted to help manage these impacts to minimize the negative and maximize the positive? • Have other local employers contributed to any changes, and to the management of the positive or negative impacts?
Health
<p>Has the health of the local community been affected by the mine?</p> <ul style="list-style-type: none"> • If so, is this impact negative, for example because of pollution, poor safety practices, or the introduction of diseases by migrant workers? • Or is the impact positive, through better environmental, health and safety standards or by the provision of health services for employees and the broader community? • How does mine provision compare with that provided by government or other companies?
Community resources
<p>Has the mine used or damaged resources that were previously used by the local community to support their livelihoods? For example:</p> <ul style="list-style-type: none"> • Agricultural land or water resources previously used for food production. • Sites of interest that were important for the local tourism business. • If so, how has the mine responded?
Local infrastructure
<p>What impact has the mine had on local social and economic infrastructure? For example:</p> <ul style="list-style-type: none"> • Roads, railways, air transport or port facilities. • Leisure, sports and recreational infrastructure. • Schools, hospitals and clinics. • Educational facilities. • Supply of electricity, fuels, water and waste water treatment facilities. • Waste treatment. • Telecommunications and postal services. • Local government.
Environmental and social nuisance
<p>Are there any negative or positive environmental impacts upon the local community, and are these impacts equitably distributed? For example:</p> <ul style="list-style-type: none"> • Noise. • Air pollution. • Water pollution. • Waste generation.
Local businesses
<p>Has the mine contributed to the development of local businesses? For example, has it:</p> <ul style="list-style-type: none"> • Placed contracts with local businesses when possible? • Shared skills, facilities or expertise? • Invested in the development of local businesses through social investment programs? • Worked with regional, national or international organizations to develop the local economy?
Benefiting from mining
<p>Are there any barriers that prevent the local community (or sections of it) from benefiting from the presence of mining operations? For example:</p> <ul style="list-style-type: none"> • A lack of appropriate skills. • Inadequate infrastructure. • Management practices at the mine. • Access to capital.
Relations with government
<p>What relationships does the mine have with government agencies at the local, regional or national level, what is the impact of these relations on both parties, and how transparent are these relations for other members of the community?</p>

Social Distribution of Employment

In addition to identifying the levels of employment, it is important to identify how such benefits are being distributed. Therefore, the proportion of employment going to different social groups should be noted. This in turn can be related back to particular features of the country's politics and policies, as identified in Stage 4. Relevant groups could include:

- expatriate and host country workers;
- local and non-local host country workers;
- males and females; and
- ethnic, religious, language, age or cultural groups.

Dependents

The families of those that are employed directly or indirectly by the operation are also dependent on the employees' salaries for their livelihood. This is a tangible economic benefit that should be recorded.

The number of dependents can simply be calculated by multiplying the total number of employees by the average family size. However, there are three points to be aware of:

- The average family size can vary between different countries. An estimate of this can be ascertained from a household survey or a survey of a representative sample of workers.
- There may be some double counting with regards to employees that work part-time, for instance, who may also be counted as dependents. Care must be taken not to include those that are employed by the operation as dependents.
- If there is more than one income earner in the household, then the number of dependents counted should be proportionate to the contribution to household income from the mining project.

5.3 Value of Procurement

Overview

Money spent by mining operations on procurement (purchasing and outsourcing) of goods and services from the domestic economy can be considerable. This can have the effect of boosting local production and promoting the development of new industries.

Examples of the sectors that can benefit from mining operations in this way include utilities, construction, manufacturing, food supply, hotels, bars and restaurants, road, rail and air transport, and banking and insurance.

As information will need to be collected from suppliers as part of the calculation of indirect employment, it is recommended that data collection be conducted for these two elements simultaneously.

As with employment, you should try to get a picture of how procurement spend has changed and will continue to change over time. Therefore, try to get figures for ten and five years ago, and estimates for five and ten years in the future. As with employment, more approximate estimates can be produced for these years than for the current year if data are not available.

Profile of Supply Chain

Provide a brief overview of the supply chain, by answering the following. This information should be available from the procurement or accounts departments of the mine:

- How many suppliers are there in total, both domestic and international? What is their level of expenditure?
- How many of these are based domestically (locally/nationally)?

Describe the supply chain, both in terms of the goods and services that are supplied, as well as the respective suppliers. Follow these steps for a representative sample of approximately 10 items to provide an overview of the supply chain, and feed them into Table 3:

- Provide a brief description of the goods and services provided. Where are these purchased from (company, location and whether from a disadvantaged supplier)?

Table 3: What Main Supplies are Purchased from the Local Community

Item	Approximate Value (\$?year)	Where Purchased From?		Disadvantaged Supplier (Y/N)
		Company	Location	
1.				
2.				
3.				

Value of Domestic Procurement

For these calculations, it is not necessary to contact all the suppliers because this would be very time consuming. Instead, a sampling approach should be taken (as in the indirect employment calculations in section 5.2).

A representative sample of domestic suppliers should be contacted. The sample should be representative in terms of type of supplier, geography, size of purchase and skills required.

1. Calculate the value of procurement purchased through these suppliers.
2. Multiply this up to estimate the total value of procurement sourced domestically (assuming that the sample is accurately representative of the domestic supply chain).
For instance, if the value of procurement for a third of domestic suppliers was calculated, then multiply this value by a factor of three to get the total value of domestic procurement.
3. Divide this value by total procurement (domestic and international) to estimate the percentage of total procurement that is domestic.

This information should be available from the procurement or accounts departments of the mine.

In addition to suppliers, it would also be useful to estimate the proportion of local businesses that are not suppliers who are dependent upon the mine (for example because of employee retail or leisure spending). This estimation is best achieved through consultations with local businesses themselves and representative groups, such as Chambers of Commerce. At this stage it may be useful to consider whether the proportion of procurement sourced locally or in-country is high or low, and what the reasons for this are. For example, is there no local supply chain, or are there factors (such as quality assurance) that

inhibit local procurement? Also, have there been initiatives to increase local procurement, and how successful have these been?

Capital Expenditure Projects

Major new investments will also require procurement, but the value will be much greater than for normal procurement. Therefore, if there has been recent investment (for example in the last five years), or if there is current or planned investment, describe the scale of the expenditure, and where construction services and capital equipment will be purchase from. If data are available, use a similar process to that described above. If not, a more qualitative description of the investment should be provided, describing the value of the works, the number of people employed and the source of the construction and capital equipment suppliers.

Distribution of Procurement Spend

When quantifying procurement, also check to identify which sections of the population are benefiting, and why, and whether the distribution is equitable. Different types of groups to consider include those relating to gender, ethnicity, religion, language, culture, place of origin, residential location, age etc. Again results under this section need to be cross-referenced back to the Stage 4 results.

5.4 Human Capital for Employees

The development of human capital can come through training opportunities offered to those that are employed by a mining operation, and sometimes to the employees of key suppliers. These benefits typically come in the form of vocational training (directly job related).

In order to highlight this benefit, calculate the following:

- Number of employees that received any employment related training in the last financial year, for example technical, project management, or professional development. Specify the types of training and include very basic things if appropriate such as literacy and home economics.
- Time cost: estimate the amount of time dedicated for training in the last financial year. Express this as a percentage of time spent on the job.
- Financial cost: how much was spent on training in the last financial year?
- Outcomes: what were the outcomes from the training provided? This is a difficult outcome to measure and what is possible will depend on the data available locally. Possible options include:
 - qualifications – academic, certificates for vocational training;
 - increased labor productivity;
 - reduced staff turnover;
 - improved safety performance;
 - reduced pollution incidents / emissions;
 - reduced staff turnover; and/or
 - anecdotal evidence of improvements in employee performance, evidence of promotions from previously disadvantaged groups.

Where possible, attempt to get a profile of how investment in human capital for employees has changed over time and how it is expected to change (using five and ten years in the past and future as reference points). For example, are there plans to refocus training on post-mine needs if a mine is nearing the end of its economic life? In many mines employment will have decreased as a result of productivity improvements. Both the positive and negative implications of this should be addressed. The gender, ethnic and regional dimensions of labor noted in earlier sections should also be carried through to this part of the assessment.

5.5 Contribution to Government Revenue

The objective in this section is to provide a way in which to record the revenues generated by the operation, which contribute to national, regional and local government.

Because national regimes vary so widely, it is not possible to give detailed guidance on how to calculate payments to public authorities. However, the intention is to identify all net payments to the public sector, except those that are in return for a commercial service provided (such as water supply or rail transport where the services are in public ownership).

As a starting point, the methodology adopts the standard reporting format adopted by the Extractive Industries Transparency Initiative (EITI). ICMM companies have supported the introduction of the EITI, and hence mines operated by ICMM companies either are or will be familiar with this format, and will have to produce these data anyway. However, because of the particular focus of the ICMM Resource Endowment initiative, some additions have been made to reflect certain payments that are not covered by the EITI.

For more detail on EITI, including reporting guidelines, see: www.eitransparency.org

Details of the methodology to be adopted are presented in Section A2 in Annex A.

An effort should also be made to separate out the flows of revenues that accrue in the first instance to different levels of government and why that distribution is what it is. This analysis will be complemented by the analysis of the fiscal dimensions of governance as described in Stage 6.

5.6 Value Contributed to the Host Economy

Overview

There are two potential approaches to calculating the value contributed to the host economy which have been used before by agencies such as the World Bank:

- value added; and
- retained value analysis.

Value added is the approach taken to calculating GDP figures at the national scale, and is also applied at the corporate level. Value added is the most robust method, but may be harder to calculate where the required data do not exist. Value added also includes economic benefits that flow to the owners of capital who, in the mining industry, will often be foreign.

The retained value (RV) of an operation is that portion of the value of output that is retained in the economy of the host country. It is a more approximate measure of the financial contribution made by the operation to the economy, but may be easier to calculate in some circumstances.

The objective of this project is to identify contributions to host economies. Therefore, it is proposed to calculate value added, but to subtract from that any elements that are taken out of the country of operation (for example profits, the savings of expatriate workers, management fees or interest payments).

Local Element of Value Added

Total value added is: total revenue less the value of payments to suppliers.

Value added can also be calculated by:

- *total payments to labor/employees* +
- taxes and royalties disbursed to governments and others +
- *all returns to capital* (including interest payments, profits paid to shareholders and profits retained in the business for investment and replacement of depreciated assets).

This total value added calculation should be included in the report. However, the local element should be calculated by removing all flows of money that leave the host economy. These may include:

- repatriated profits;
- interest payments to foreign banks;
- management fees to overseas headquarters; and
- the savings of expatriate workers that are transferred overseas.

The Opportunity Cost of Economic Resources

In general, a resource that is being used for production could normally be used for another purpose. For example, a building that is being used as a shop (because that generates the highest rental income) could also be used as an office. Economists assume that the market dictates which use a resource will be applied to, through the price mechanism. Therefore, using the building as a shop means there is no opportunity to use it as an office. However, if the shop shut, the building could still be used as an office, albeit at a lower rental. This concept is referred to as the 'opportunity cost'.

Therefore, whilst the total benefit to the owner of the property is the value of the rent as the shop, the opportunity cost is the value of the rental in office use (the value foregone). For example, if the rental value as a shop is \$100 a month, and the rental value in office use is \$70 a month, the opportunity cost of using it as a shop is \$70 a month, meaning that the real benefit of using the property as a shop is only \$30 a month. The same concept applies to all factors of production (land, labor, capital etc).

To produce totally accurate estimates of value added, the concept of opportunity cost needs to be factored into the value added calculation. This can be done relatively simply for each of the factors of production:

- Labor – unless the mine is in an economy with full employment (and no hidden unemployment), the opportunity cost of labor can roughly be estimated as the actual minimum wage applicable in that country. This may effectively be zero if unemployment is high. If there is full employment, it is safe to assume that the workers could get jobs that are almost as well paid; in which case the opportunity cost of the labor will almost equal the actual cost, so labor value added will be very limited.
- Land – if the mine sits on land that could have an

alternative productive use (for example development or agriculture), then the annual value of that land use on the open market should be subtracted from the value added figure. For example, if the land could be used for farming then the annual value of the crop should be subtracted from the value added.

- Capital – if the finance for the mine has come from abroad, all of it is value added to the host economy. If there has been domestic financing, it may be possible to compare the return to capital from the mine project against other possible returns.

It is not recommended that much time be devoted to calculating the opportunity cost, as this exercise can become extremely time intensive. Therefore, and where available, rough estimates of opportunity cost should be used.

5.7 Contribution to GDP and to Exports

Mining can be a significant sector of the economy in developing countries. Two ways to illustrate this are by measuring the contribution of mining operations to Gross Domestic Product (GDP), and to exports.

Definitions:

- GDP: The total output of goods and services produced within a country in a particular time period (usually a year). It is equal to the sum of the value added, which is broadly equivalent to retained value as in section 5.6 by each industry, net of all inputs, including imported intermediate goods.
- Exports: The sale of domestically produced goods and services to another country.

The methodology for these tasks is presented in Section A3 in Annex A.

5.8 Social and Infrastructure Provision

Overview

The impacts of a mining operation on the local economy often go beyond the creation of employment and contribution to fiscal flows. It can also affect society in a number of other ways through the provision of social facilities, for instance by building and/or maintaining schools, hospitals, clinics, police stations, and public libraries.

‘The impacts of a mining operation on the local economy often go beyond the creation of employment and contribution to fiscal flows.’

The objective of this section is to identify the full range of social provision that is provided by the operation at present.

Method

Table 4 presents a simple summary of different types of social and infrastructure provision, broken down by category of beneficiary. The table includes a broad cross section of examples of different types of activities, some of which may not be considered to be social provision in all countries that the company operates in. However, all the operation’s activities should be recorded so that a complete and comparable picture of social provision activities undertaken by the company can be compiled.

The list is not exhaustive – additions need to be made to it if the operation is providing other types of assistance to the local community. It is important to consult widely within the operation to ensure that all social provision assistance is recorded.

The types of provision can be classified as:

- Physical infrastructure (roads, utilities);
- Education;
- Health;
- Local enterprise development; and
- Community development.

Table 4: Social Provision

Community Social Provision	1. Description of Activity at the Operation	2. Approximate Cost (\$ per Year)	3. Other Contributions (eg Staff Time and Other in-kind Support)
Physical infrastructure			
• Transport (road, rail, airstrips etc)			
• Utility services (water, electricity, telecoms etc)			
• Other			
Education			
• School facilities built and maintained			
• Education, training, scholarships/bursaries and awareness raising of people not employed by the operation			
• Contribution to teacher salaries			
• Other			
Health			
• Hospitals/clinics built and maintained			
• Immunization/education programs			
• Medical supplies			
• Other			
Local enterprise development			
• Helping to expand customers' businesses through training or investment			
• Purchasing from disadvantaged communities			
• Helping to expand suppliers' businesses through training or investment			
• Other			
Community Development			
• Donations			
• Sponsorship of arts, cultural or sporting events			
• Capacity building through training, mentoring and work experience etc			
• Sharing company facilities – sports, classrooms, laboratories, emergency equipment			
• Multiple resource use – sharing resources such as grazing, waste wood collection, trails, harvesting unused natural resources etc			
• Facilitating community access to decision makers			
• Other			

For each area of social provision:

- Provide a description of the activity.
- What was the approximate cost (\$ per year or initial investment cost) – note that these efforts can be carried out in co-operation with government or other institutions (for example NGOs) and therefore only the portion of costs borne by the operation must be included.
- Describe, and quantify where possible, other contributions e.g. staff time and other in-kind support. If it is time dedicated by employees through a staff-volunteering program, then calculate the equivalent wages earned for that amount of time.
- Identify which groups within the community (in terms of gender, ethnicity, religion, language, culture, place of origin, residential location, age) are receiving the assistance, and whether or not the benefits are distributed equitably.
- Identify the interactions that the company had with employees, community leaders and government representatives when determining what support to provide (for example, did the company plan physical infrastructure so it would also be of use to other local businesses and residents?).

Once again this area of the analysis will be complemented by the analysis of some of the institutional and governance issues discussed in Stage 6.

5.9 Comparison of Local and National Socio-economic Development Trends

Overview

It is important to make comparisons between local and national level socio-economic development outcomes because in many instances, the socio-economic impact of mining operations at the micro level can point in the opposite direction to macroeconomic trends. For example, if macroeconomic indicators are largely negative, but there are strong local socio-economic benefits associated with a mining operation, then this can highlight the range of benefits that the mining industry can bring to the local economy. Likewise, macroeconomic indicators can be positive, while local socio-economic benefits are small.

Selection of Indicators

The majority of the indicators selected for this assessment come from the UNDP's Human Development Indicators (HDI), and are also linked with the Millennium Development Goals (MDGs). Data on these indicators are available from the UNDP website as referenced in Table 1 under Stage 3.

They are as follows:

- Adult literacy rate (percent of those aged 15 and above).
- Combined gross enrolment ratio for primary, secondary and tertiary schools (percent).
- School test scores⁸.
- GDP per capita.
- Unemployment.
- Population with sustainable access to an improved water source.
- People with sustainable access to improved sanitation.
- Doctors per 100,000 of population.
- Under-nourished people as a percent of population.
- Life expectancy at birth (years). Although this is an ideal indicator, it may be complicated to estimate at the local level. As an alternative, the prevalence of relevant diseases (HIV/AIDS and other infectious diseases) should be used.
- Male to female ratio.

⁸ School test scores are not part of the HDI, but may be relevant where mines are sponsoring education.

For national level indicators, definitions and data are available on the UNDP-HDI website:
http://hdr.undp.org/reports/global/2004/pdf/hdr04_HDI.pdf

The indicators can be found in the corresponding tables of the HDI (see Table 5).

Local Level Indicators

There is no straightforward way of estimating these indicators for the local economy. However, there are possible sources in order to measure these indicators at the local economy level:

- country level Human Development reports, which may have breakdowns for each town, city and/or region;
- from company publications such as Corporate Social Responsibility reports;
- from the local authorities with responsibility for health, education, finance/economy, or from census or statistics agencies; and
- for some countries that have Poverty Reduction Strategy Papers, there will usually be local monitoring capacity that includes data on some MDG variables at the local level.

Table 5: Indicators and Corresponding HDI Reference

Indicator	HDI Reference
Adult literacy rate (% age 15 and above)	Table 1
Combined gross enrolment ratio for primary, secondary and tertiary schools (%)	Table 1
School test scores	Source Locally
GDP per capita	Table 1
Unemployment	Table 20 or Source Locally
Population with sustainable access to an improved water source	Table 7
People with sustainable access to improved sanitation	Table 7
Doctors per 100,000 of population	Table 6
Under nourished people as a percent of population	Table 7
Life expectancy at birth (years)/HIV Prevalence (% ages 15-49)	Table 1/Table 8
Gender balance in the neighboring community	Source Locally

Comparison of Local Socio-Economic Development Performance with National Performance

Both the local and national level indicators can be brought together, in order to compare the socio-economic development status of the community to that of the country:

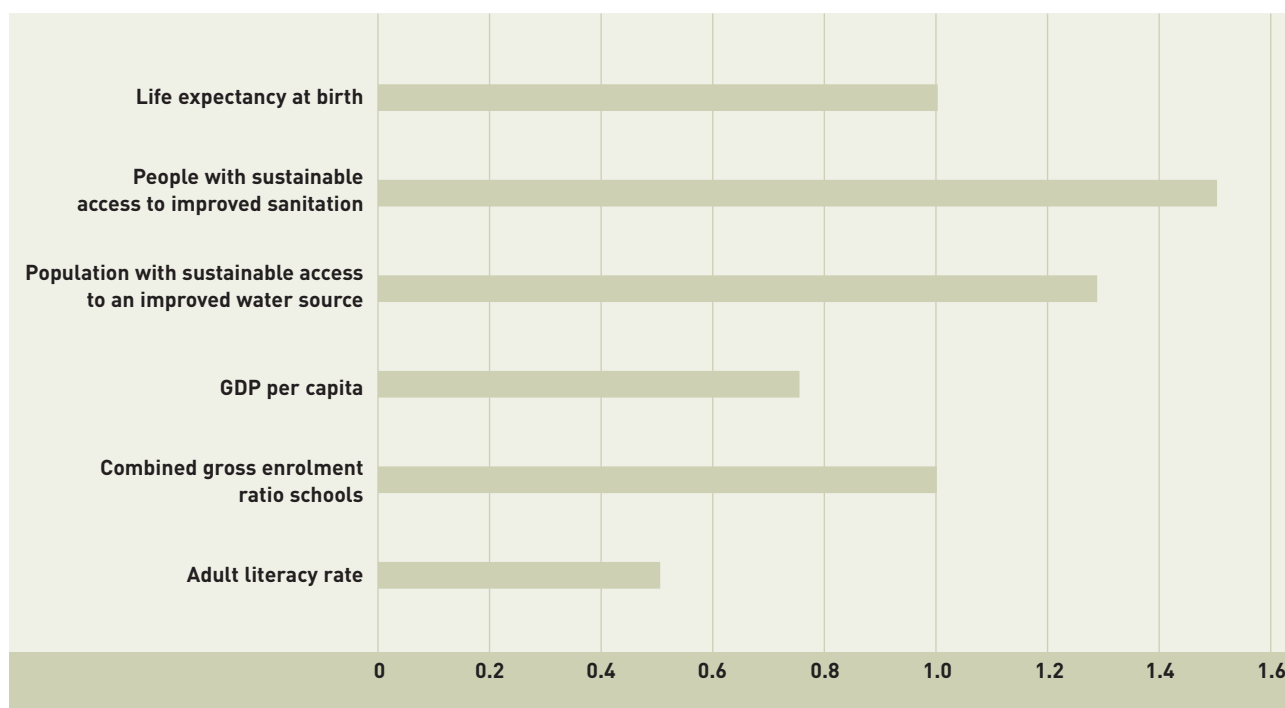
- Calculate the ratio between indicator values at the local level to the corresponding indicators at the national level.
- Present these ratios in a histogram in the following way (see Table 6). Note that the results illustrated are hypothetical, and used for illustration purposes only:

Interpretation of the results:

- if the values are greater than 1, this indicates that the local economy is performing better than at the national level; and
- if the values are less than 1, then the local economy is performing worse than the country as a whole on that particular socio-economic aspect.

Once you have an understanding of how the host areas compares with the national data, consider the reasons for differences in performance. For example, what are the causes of differing levels of poverty, did they exist before mining investment arrived, and what is the role of mining in exacerbating or alleviating poverty?

Table 6: Ratio between local and national level indicator values



Assessing the Broader Impact of Mining

6.1 Introduction

Stages 3 and 4 of this toolkit focus on describing the economic and social outcomes and the proximate macroeconomic and governance influences of the case study country. Stage 5 has described and accounted for the positive and negative impacts of mining operations at the project level.

These three stages will have provided a good account of the relative performance of the case study country over time and in relation to its peers, as well as the direct and induced impacts that mining operations have had primarily at the local and regional level. However, these accounts do not probe more fundamentally into how mining operations impact on governance structures, institutions and policy choices at different levels of government (national, regional, local). Instead at the mining project level it is generally assumed that the political and institutional environment in which they operate is a given.

The poor socio-economic performance of many resource-rich countries gives reasons to believe that extractive industry activities can have a non-trivial (and sometimes a negative) impact on governments' and communities' incentives. This is particularly the case if the size of this industry is large relative to the overall size of the national economy. It is this broader but more indirect impact on governance structures and institutions that is relevant for explaining differences in outcomes across resource rich countries.

But because this impact is indirect and dynamic and can be either positive or negative, the challenge has been to understand under which governance and institutional conditions mining activities contribute positively to improving government capacity and the local ability to implement effective policy choices.

In general, it is clear that mining companies can only exercise limited direct influence on a country's 'governance' performance. However the issues considered below, even if indirect and only weakly controlled by the companies, have an impact on:

- socio-economic impacts;
- the political risks of mining investments;
- the delineation of the scope of mining companies' corporate responsibilities; and

- the development of constructive partnership arrangements between companies, governments and communities in building institutional and governance capacity that can enhance the socio-economic contribution of the mining sector.

The objective of Stage 6 is to explore this less tangible and more qualitative impact of mining operations. In doing so it sets out to explain in part why the *proximate* factors considered in Stage 4 above are what they are in any particular country.

6.2 The Taxonomy: Exploring the Causes that Underlie Proximate Influences

The Analytical Framework proposed a two-way taxonomy (with five key elements in each dimension) to probe into the very complex processes of how mining investments contribute (or not) to the gradual accretion of enhanced capacity for sound governance and institutions and to the mining country's processes of development and change.

The taxonomy is reproduced in Table 7⁹. It connects:

- the *policy domains* that can and have been influenced by mining activities (the columns of Table 7); with
- *Governance characteristics* and institutions that the relevant literature proposes to describe efficient governance systems.

The general assumption that underlies this taxonomy and the Stage 6 analysis is that the broader socio-economic impact of mining operations is conditioned by the:

- economic, political and social governance system of the mining country;
- coherence of government policies across the five main policy domains as presented in the columns of Table 7; and
- capacity of different levels of government for coordinating and facilitating cooperation between public institutions, companies and communities.

⁹ Table 7 was originally presented (in a slightly different form) as Table 8 in the Analytical Framework.

Table 7: Cross-cutting Taxonomy of Efficient Governance: Linking Common Features of Good Governance and Policy Domains

		POLICY DOMAINS				
		Legal and Regulatory Framework	Political-Administrative System	Fiscal Regime and Economic Policies	Private Sector Development	Social Cohesion and Public Service Delivery
GOVERNANCE CHARACTERISTICS	<p>State strength Legitimate and capable states at all levels (national, regional, and local). A government whose policy decisions are credible and broadly accepted and an administrative apparatus that can implement these.</p>	<ul style="list-style-type: none"> • Basic constitutional set-up, general legal framework and legal mechanisms of consensus building and conflict resolution at all levels of government. • Consistency within the regulatory framework for public sector management and the interface between public and private sector at all levels of government and state-society relations. • Compatibility of mining-sector specific legislation with general constitutional and legal framework. • Legitimacy of property rights and ability to enforce these peacefully at all levels (national, regional, local). • Company legislation and ownership structures. A regulatory framework that supports all enterprises (large, medium, small, micro). 	<ul style="list-style-type: none"> • Political system: <ul style="list-style-type: none"> • Process by which government (at the national, regional and local level) is selected, monitored and replaced; and • Institutional channels through which political interest groups have 'voice' at the different levels. • Political representation at different tiers of government. Credibility and stability of legislative outcomes. • Policy decision-making process. Relationships between the Legislature, government and the civil service. • Capacity of the 'state' to formulate and implement policies down the vertical chain of public authority from central government to the very local level. 	<ul style="list-style-type: none"> • Sound aggregate macroeconomic management, including exchange rate regime and monetary policies. • Legitimacy and dynamics of fiscal (revenue) regime, including taxation, royalties, tax exemptions. • Public expenditure management capacity. Allocative and operational efficiency at different tiers of government (national, regional, local). • Non-conflicting fiscal accountability relationships between the electorate, the legislature and the executive, and within the executive at different levels. • Public administrative system and capacity at all levels (national, regional and local). 	<ul style="list-style-type: none"> • Regulatory framework for economic activities for different sized enterprises (large, medium, small, micro). • Supportive public services at the national and sub-national level. In particular: <ul style="list-style-type: none"> • Infrastructure • National and regional regulatory policies, coverage, collaborative funding and financing arrangements at different tiers of government; • Utilities • National and regional regulatory policies, coverage, collaborative funding and financing arrangements at different tiers of government; and • Human capital and labor market institutions • Supportive educational policies at different tiers of government and different educational levels. 	<ul style="list-style-type: none"> • Community development, and local organizational capacity: Orderly organizational rights and opportunities. • Industrial/labor market relations that are conducive to consensus building. • Institutional mechanisms for consensus building and management of different socio-economic interests. • Political representation with structured institutional channels for interest representation at all levels. • Basic welfare and social system across all geographical areas. • Equal opportunities in access to primary and secondary education across all geographical areas.
	<p>Limits to state strength Institutional checks and balances that support the legitimacy of government and the administrative apparatus, and guard against abuse of state power at all levels (national, regional, local).</p> <p>Compatibility of formal and informal rights, institutions and rules.</p> <p>Legitimacy of formal economic institutions guarding essential necessities of a stable economy (exchange rate, fiscal sustainability).</p> <p>Technical capacity of the public sector and decision makers at all levels.</p>					

So Stage 6 should probe in more detail into the five policy domains featured in the columns of Table 7, and link them where possible with the broader issues related to the Governance Characteristics. Particular attention should be paid to issues that:

- might have critically influenced the assessment of the quality of a country's governance as identified in the descriptive work in Stage 3 above;
- have been or have the potential to be influenced by the activities of mining companies in collaborative arrangements with the government (at different levels), private profit and non-profit organizations, local communities and perhaps the International Financial Institutions; and
- have shown up as significant factors in other case studies, including those with more negative outcomes. These are likely to include in particular: the distribution of revenue flows; the extent to which governance structures, institutions and policy choices maintain or undermine social cohesion; the cooperative solutions that governments, companies and communities are able (or not able) to craft around the provision of infrastructure and utilities, and social, educational and administrative services; and the legal framework and economic policies supporting or undermining the development of a local supply chain.

Comment

It is emphasized that the backward and forward linkages between mining operations and governance structures, institutions and policy choices are dynamic and context specific. The aim is not to apply particular rigid or well-defined models applicable to all countries: for example, of what the conflicting interests of relevant stakeholders might be and how that might influence their policy choices.

Rather the objective is to gain an understanding about how existing governance structures and institutions condition the actions of companies, government entities at different levels (national and regional), communities and other stakeholders. The objective is also to achieve a better understanding of how the different stakeholders interact and why (or why not) they have been able to collaborate across the five policy domains. The output of this stage is expected to be an analytic narrative that will refer back to the main headings in Table 7.

6.3 General Questions for Assessing the Impact of Policy Domains on Outcomes

Introduction

This section sets out a number of general questions across the five policy domain columns of the taxonomy of Table 7 to guide the broader assessment of mining operations' impact on governance structures, institutions and policy choices at different levels of government.

Detailed questions pertaining to each of the five sets of issues are provided in Tables 8 to 11.

Try to establish:

- What are the fundamental rules and regulations governing the five policy domains?
- Who are the key stakeholders and what are their interests and incentives in light of the institutional and governance framework within which they are placed?
- How do government, companies, local communities and other stakeholders cooperate and coordinate in general in the respective policy domains?
- Are government institutions thought to be capable and effective in coordinating different private and public sector interest groups?
- What in general may have supported or hampered coordination and cooperation in recent years – how do the different stakeholders view the situation in this regard?
- Have there been any changes in governance structures, institutions and policy changes over the past years/decades? If so, what/who has initiated these changes?
- Is there any information on how governance and institutional changes have affected the interests and incentives of different stakeholders?
- What specific cooperative solutions have companies and governments been able to agree upon with respect to the five policy domains? Which factors have conditioned respective outcomes?
- What specific agreement(s) has/have company/ies reached with government and communities regarding these policy areas? Have agreements been adhered to? If yes, how credible are these agreements? If not, what has led to the breakdown?
- How has the capacity of government entities (at different levels of government and including state-owned enterprises) affected (positively or negatively) the stability and credibility of agreements and settlements reached?
- Is there coherence across the different policy

domains? Are there areas pointing to conflicting or unclear jurisdictions, responsibilities and interests?

- Do formal rules, roles and responsibilities and actual practice differ for any of the aspects in the five policy domains? And if so, does this pose a challenge/or opportunity for companies?

Detailed Questions for the five Policy Domains

The next five pages outline more detailed questions for each of the five policy domains. These questions are phrased in rather general terms and do not need to be followed in a strict sense. In order to narrow down the focus of the broader national and macroeconomic impact of the country case studies, the initial findings from Stages 1 to 5 above should be used to provide guidance about which particular issues and integrating themes within or between the five policy domains warrant in-depth attention for study under Stage 6 in any particular country (recognizing as we do that no single case study will be able to study all the issues in depth).

It is anticipated that in any one case study, only a selection of the five issues will be explored in depth.

‘the objective is to gain an understanding about how existing governance structures and institutions condition the actions of companies, government entities at different levels (national and regional), communities and other stakeholders.’

Table 8: The Legal and Regulatory Framework

The questions for this policy domain are aimed at establishing the broad legal and regulatory framework within which mining companies engage with government, communities and perhaps certain organized interest groups of the polity. The objective is to find out whom the broader legal and regulatory framework puts 'in charge', how predictable government actions are, and whether the given institutions and governance structures facilitate or undermine socio-economically beneficial collaboration and coordination between government, companies and communities. If Stage 3 flagged up relatively poor performance with respect for example the 'rule of law', 'government effectiveness' and 'regulatory burden', these questions may help to point at possible causes.

- What political system does the constitution set out (presidential/parliamentary democracy/autocratic regime, centralized/decentralized system of government, one/two legislative chambers)? How are legislative, executive and judicial powers distributed across different levels of government (national, regional, local/municipality/villages)?
- How are citizens represented (electoral rules, party structures, party discipline)? How is political representation structured across different levels of governance (national, regional, local, municipality/village)?
- What has the relationship between the legislature and the executive been? Have legislative decisions been challenged by *ad hoc* executive decisions? Have executive powers been overriding legislative powers?
- How is the executive/government administration structured across different tiers of governance? What decision-making powers do different levels of the executive branches have? How are lower levels of executive/administrative powers linked to lower level legislative powers?
- Are there any perceptions as to what guides executive decision-making? How predictable are government's decisions (at different levels) for the private sector in general and the mining industry in specific?
- Are there any perceptions as to how senior executives at different government levels relate to the polity (in particular interests/elite groups) and broader society?
- What are the broad rules, regulations and practices for public service employment, including appointments/dismissals/promotions at the different administrative levels?
- Are there relevant state-owned enterprises and special agencies? When/how have these been created? How are these overseen by central government/administration? What are the respective governance arrangements?
- What broad legal regime is in place? How are property rights structured, particularly with respect to land, natural resources (above/below surface)?
- How well are property rights and other rights enforced? What are the chances/costs/obstacles for defending one's property rights successfully? Who might be contesting property rights and why? Are there conflicting or uncertain property rights?
- What experience do companies have with legal regime/legal tradition/functioning of the judiciary? Does the respective legal regime impinge on company's risk assessment?
- What laws, rules and regulations govern the conduct of private sector business, and in particular the mining industry? What requirements are in place?
- What sector specific legislation is in place (mineral laws, extraction rights, environmental requirements, labor laws, mitigation requirements, etc), perhaps at different levels of government? Is this legislation applied, or is it 'flexible'/unpredictable?

Table 9: Political Administrative System

The questions for this policy domain are aimed at finding out what the political and administrative system in the country is. The aim is to get an understanding about what sorts of incentives the system provides and how these affect different stakeholders' actions and behaviors. Important are accountability, political responsibility, administrative efficiency and effectiveness and the intended and unintended consequences of public sector and administrative reforms. Some of these issues may need to be looked at from a historical perspective, because different political and economic ideologies have included particular understandings how the public sector should be organized and it is very likely that there is institutional inertia.

- Who takes policy decisions at the national, regional and local level? How do those with decision-making powers obtain political power? How do they exercise authority?
- How do policy decision-making processes work at the national, regional and local level? What about the transparency of the decision making process? Predictability? Expectations?
- What is known about the direct or indirect involvement of the polity/elite/interest groups in domestic policy making processes at different tiers of government? Are there strong private-sector interest groups defending a particular status quo and seeking continued access to, for example, inefficient rents that undermine broader socio-economic development?
- How do interest groups 'voice' their interests at the different levels of government (national, regional, local)? What institutional channels exist? What informal channels are there?
- How are citizens represented at the different levels of government? Do citizens' representatives (legislature) influence and scrutinize government policy decisions? What sorts of public debates and feed back takes place? Are legislative outcomes credible and legitimate¹⁰?
- How are policy decisions implemented? How effective and efficient is public administration? Where are the typical bottlenecks¹¹? Why might these exist?
- What sorts of public sector/administrative reforms have been tried and pursued in the past? What has the experience been, and why?
- How well do national level policy decisions 'travel' down the vertical chain of public authority from central government to the very local level? How does this impact on the implementation of key policy decisions? How well do policy needs (decisions, regulations etc.) travel up the vertical chain of public authority from the local level to the central government level?

¹⁰ An issue here is for example how competitive mining law was enacted, for example by democratic legislative approval, executive decree etc.

¹¹ This sort of information is often revealed in Expenditure Tracking Surveys, typically conducted by the World Bank or other donors.

Table 10: The Fiscal Regime and Economic Policies

The questions for this policy domain are aimed at: establishing where fiscal authority lies, both with respect to revenue collection and expenditure management; inferring how the structure of the fiscal regime might impinge on different stakeholders' interests and incentives; and in whose favor macroeconomic policy choices have worked.

- What are the broad structures of the fiscal regime in place? What are the key tax and non-tax revenue items? How does direct and inducted revenue from mining operations relate to overall revenue collection?
- At what levels of government are taxes and other revenue collected? Do lower levels of government have institutionalized rights to collect and retain revenue? At what levels of government can revenue policies be set?
- How is revenue distributed across different levels of government (constitutionally set revenue sharing formulas, centralized system of government spending, set or variable grants to lower levels governments etc.)? Have there been social or intra-governmental tensions and conflicts over the sharing of revenue?
- How significantly does revenue from extractive industries feature in the government budget? At what level of government is which revenue from the extractive industries collected? Is some/all of this revenue retained at the collection level? Does a revenue sharing formula apply? If, how does this link to the political and administrative system of the country?
- What is the tax regime for the mining sector? How does it compare internationally? What sorts of incentives are inherent to the tax regime? What sorts of tax exemptions are granted and upon which conditions? How predictable and stable are tax policies?
- Have there been major shifts in revenue policies in the past? If so, have these been directly or indirectly linked to extractive industry activities? What has prompted changes in the tax regime?
- How are revenue collecting agencies administered and overseen across different levels of government?
- For decentralized states or where conflicts and tensions have occurred, how do revenue collection powers link to political representation?
- What agreements have been reached on tax and royalty payments between companies and government? With whom have agreements been reached? Have agreements been subject to renegotiations? How do country specific agreements compare to agreements reached elsewhere?
- How does the budget allocation process work? How transparent and comprehensive is the process (see standard International Financial Institutions diagnostics, or the Extractive Industries Transparency Initiative if the country is a signatory)? Which parts of the executive and the legislative are when involved in the allocative decision making process? Are there fixed rules and are these adhered to?
- Beyond the description of fiscal performance in Stage 3, what expenditure trends (over time and within year) can be observed (see Public Expenditure Reviews and other diagnostics), and is there any inference on the driving forces/political economy behind expenditure trends?
- What is the general assessment of the public financial management system (see Country Financial Accountability Assessments and other diagnostics)? To what extent do fiduciary risks exist? Where are the weaknesses in the budget cycle? Is the approved budget a good indicator for actual spending? Has the Public Financial Management system improved in recent years, or deteriorated?
- What role and power does Supreme Audit Institution have? Are its reports meaningful and proof of the propriety of public funds? Are other accountability institutions functional (public accounts committee)?
- Have major macroeconomic policy shifts taken place and if, what/who has initiated these? Beyond the description of macroeconomic performance in Stage 3 is there any inference on whether particular domestic interest groups have influenced choices over broader macroeconomic policies?

Table 11: Private Sector Development

The questions for this policy domain probe into the regulatory framework for economic activities of different sized enterprises (large, medium, small, micro) with the aim to understand the potential for but also the constraints for developing a local supply chain and the emergence of a more differentiated economy on the back of mining investments (for example through increased entrepreneurial activities around mines or by people currently or previously employed in the mining industry). The questions for this policy domain also probe whether the existence of a mining industry has contributed to broader development of infrastructure and transportation systems, of the cost-efficient provision of utilities and of other industrial inputs (technological developments, banking industry) that are of benefit for the diversification of the economy. Such spin-off effects for other industrial sectors have historically been important in a number of countries that started off with a high dependence on extractive industries but have then diversified and are now among leading industrialized and emerging market economies. If the mining industry has not been able to contribute to such spin-off effects the reasons may reside with specific government policies in these areas, or with constraints that result from other policy domains, for example the inability to establish the necessary fiscal and administrative capacity or a facilitating regulatory framework.

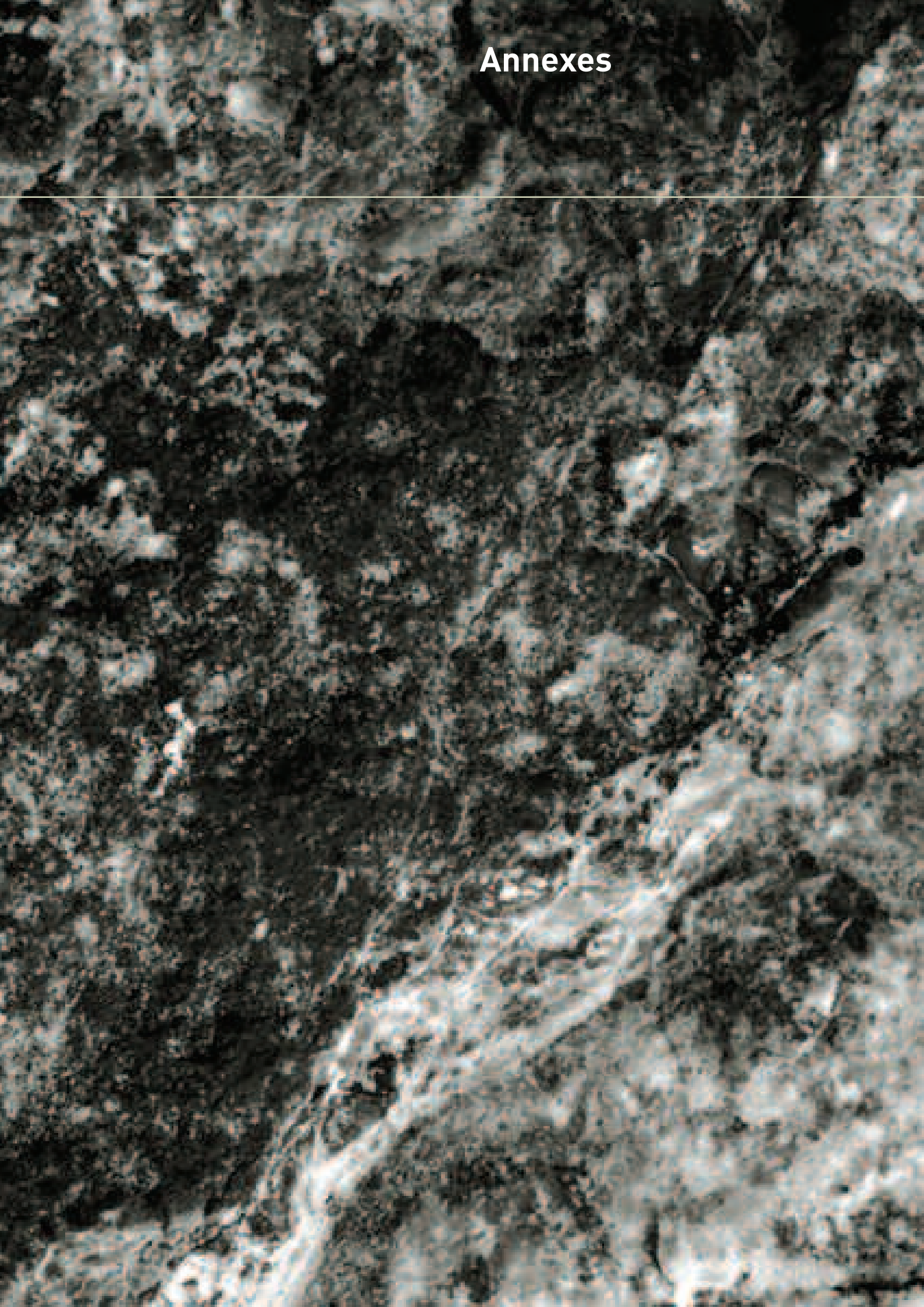
- Is there a thriving private sector in the country? For example, does private economic activity make up a large proportion of GDP and is the private sector growing?
- How important is the informal sector of the economy? If it is a large proportion of economic activity, why are more businesses not in the formal sector of the economy?
- Is the private sector diversified, for example with strong sectors and businesses in agriculture, extractive industries, manufacturing, tourism, financial/business services and personal services? Or is the country dependent on a relatively narrow range of economic sectors? Is the development trend towards diversification, or to concentration in particular sectors?
- Is there a difference between the success and vigor of small, medium and large enterprises, or between companies in the formal and informal sectors? Is one sector growing more quickly than the others, or is one contracting?
- How easy is it to start up a new business? How many different permits and licenses are required, and how many days does it take to get the required licenses and permits?
- Has there been a history of heavy government involvement in the country's main economic sectors? For example, were some sectors nationalized by government, or was the establishment of certain sectors down to government interventions?
- What is the attitude of the government towards the private sector? Does the government argue for a strong role for business in national development, or is the government more focused on their own role?
- Is the business sector effectively represented by trade associations or a business friendly political party? What role have these had in influencing the development of the private sector, and has this role been controversial? What do other stakeholders think of business representatives? For example, are they generally seen as acting in the public interest, or just in the interests of their investors?
- Is the tax regime considered to be business friendly by investors? Do the government or the population at large believe that tax rates are too low or too high, and is there much disagreement about this?
- Is the country open to foreign investment, and if so in which sectors? Are sectors that are considered to be strategic, such as oil and gas, minerals or manufacturing, open for foreign companies? Can foreign companies easily buy domestic companies, and is it easy for domestic companies to invest abroad?
- Is the country open for foreign trade? For example, is it a member of the World Trade Organization or any free trade areas, and how high are external tariffs? What is the value of trade as a percentage of GDP?
- Do businesses believe that labor market regulations are conducive to doing business in the country, or are requirements too onerous? What is the view of other stakeholders, such as labor unions, political parties and the public at large?
- Does the government intelligently regulate or invest heavily in infrastructure in a way that benefits businesses? For example, are highway, railway, energy and telecommunications infrastructure widely available and of a high standard?
- What is the role of government in delivering such infrastructure services? For example, does it use private finance or contracts, does it regulate to ensure both competition and fair returns to investors or does it take the lead and provide the infrastructure itself?
- How has the mining industry affected the development of infrastructure, for example has it provided or funded investments? Do mining companies and government coordinate the provision of infrastructure? Have other sectors benefited or suffered because of mine related provision?
- Does the government invest in education, and are graduates from schools and universities of the standard required by private businesses, or do businesses need to invest in supplementary training and educational activities?
- Do government regulators and institutions – and businesses – observe legislation or legal decisions concerning the property and affairs of private business?

Table 12: Social Cohesion and Basic Public Service Delivery

The questions for this policy domain explore the extent to which the provision of social services by the mining industry complements or substitutes the provision by government (at different levels). If government provision is inadequate or skewed, and companies substitute in order to alleviate their employees' social risks, this is most likely a sign of weak administrative capacity, financial constraints, or other motivated unwillingness to expand and pay for basic services. In such a situation, it would be desirable if companies' provision of basic services would, over the medium term, contribute to improving government capacity or the development of an affordable private industry that provides such services.

- What are the broad organizing principles of the social policy system (health, pension, unemployment, other social risks)? What does the constitution or government policies set out as the social responsibilities of the state? What is the coverage? What entitlements to citizens have?
- Is the social policy system a tax-funded system, an insurance-based system, or a combination of the two? How are social services funded?
- Who are the main providers of social services? What government entities and at which level of government? What private sector providers are there (for example faith based organizations)?
- Does government actually provide the social services for which it formally takes responsibility? Is it capable to do so? Is access egalitarian or skewed towards certain regions and areas (urban/rural etc)? Note that some of this information is available in Poverty Reduction Strategy Papers.
- In addition to the social services that government provides, what social services do companies provide? Are companies supplementing or substituting government's provision of basic social services? If the latter, what are perceived to be the major constraints for government's inability or unwillingness to provide basic services?
- Do companies and government collaborate in the provision of social services or with respect to inputs to the provision of social services (skills, training capital investment etc)?
- For the health care system in particular, what are the organizing principles of the national health care system in terms of providers, funding, access and rights to health care (tax funded, insurance scheme, mixed schemes)?
- Does project level health care link up with the national health care system (either privately or publicly operated)?
- How is insurance against major social risks (accident, injury, death, unemployment) organized? How do company and national schemes link in this respect?
- For the education system in particular, what are the organizing principles of education systems, for example, with respect to national curricula, educational rights and requirements, education policies, professional and vocational training schemes?
- How is the provision of education funded (basic/secondary/tertiary at different levels of government)?
- What professional and vocational education schemes are in place in the public sector but also with respect to the mining industry?
- Does the national education system deliver the required skills, which the industry needs? If not, how does the industry cope with achieving its labor demand?
- How does the mining industry relate to professional associations, continuous education institutions etc? What initiatives has it had to undertake to satisfy its labor demand?
- Does the mining industry support the certification of skills and continuous education for staff? And if so, how? Is this in any way coordinated with national education policies? Are there any government regulations on certification and transferability of skills?
- Are skills acquired through employment in the industry kept very specific, or are they transferable? Have companies encouraged or restrained the transferability of skills? What incentives guide the industry's behavior in this respect?
- Has government in any way reacted, or been able to react to social changes induced by employment in the mining industry and changes thereof (shift from labor intensive to technology intensive production, migration to mining locations by main income earner with or without dependents)?

Annexes



Annex A

Detailed Methodology Guidance for Stage 5

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A1. Calculating Employment

Introduction

This section provides detailed guidance on how to calculate employment created by the project. Overall, the focus is on identifying employment within the host country, with assessment of direct, indirect and induced employment included. Figure A.1 summarizes the types of employment that can be generated by mining projects. Each category is explained in more detail in the following sections.

Estimation of Full Time Equivalent

The following sections provide guidance on how to calculate each category of employment. All employment should be expressed as full time equivalents for a year. See Box A.1 on how to calculate this.

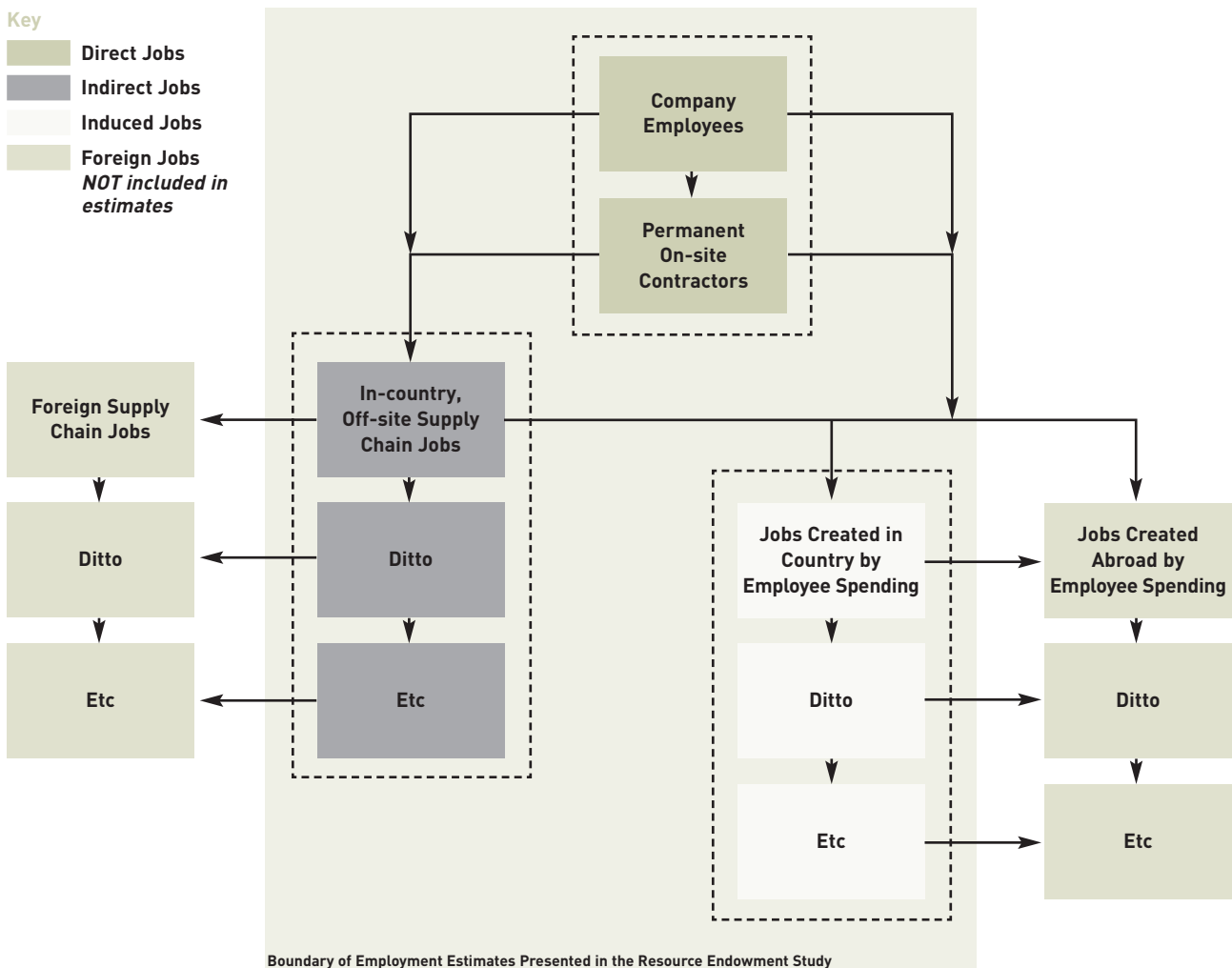
Box A.1: Full Time Equivalent

A full time job is one that occupies employees for thirty hours or more per week¹². Therefore, the following employment examples each constitute one full time equivalent year of employment:

- a member of staff who works a permanent five day a week contract with a full working day, or those on full time shift patterns;
- two part time staff, each of whom works two full days a week throughout the year; and
- four seasonal or casual staff who work for five full days a week, but only for three months of the year.

¹² NB Because the focus is on number of people employed (rather than the amount of hours worked), one person working a sixty hour week would only constitute one job. 30 hours is taken as the minimum number of hours for a full time job.

Figure A.1: Employment Impacts



Direct Employment

As shown in the figure, direct employees are those employed by the company, or those who work permanently on site. The total is simply the number of individuals on the payroll, expressed as full time equivalents.

From this total the percentage of individuals that are nationals can be calculated: this is simply the number of nationals divided by the total number of individuals on the payroll, expressed as a percentage. This information should be readily available from personnel/human resource departments.

Where there are headquarters or other overhead staff employed within the country, the proportion of these that relate to the mine should be included. If this is not known, simply use an appropriate proportion. For example, if there are 100 in-country headquarters staff and the mine accounts for one third of employment at the group's mines in that country, assume that 30 of the headquarters jobs are related to the mine in question.

In each case, distinguish between local and non-local employment.

Indirect Employment

Indirect Employment Created in the Supply Chain

Indirect employees are those who work for the operation's suppliers and contractors and whose employment is dependent, at least in part, upon custom from the operation (NB as discussed above, indirect employment excludes those permanently based on site, as these are considered to be permanent). As shown in Figure A.1, the purchase of goods and services creates employment in suppliers, and also in suppliers to suppliers (hence the term the 'multiplier effect').

Employees in suppliers or contractors do not have to be permanently engaged in work for the operation for the employment to be counted. For example: a construction contractor who provided 20 workers for a fixed three month period would have had the equivalent of 5 full time jobs created from the operation in that year ($20 \times 0.25 = 5$); and a supplier who employs 100 staff and who sells ten percent of his output in a year to the operation would also have had the equivalent of 10 full time jobs created by the operation's custom.

This information should be available from suppliers and contractors. If a portion of the work is subcontracted to other companies, similar calculations should be done for them. It will very often be useful to record what proportion of indirect employment is retained 'locally'. The definition of local will of course vary from one location to another, and an area of impact should be selected in discussion with stakeholders which reflects local attitudes and realities.

Table A.1 summarizes how to calculate supplier and contractor employment. If the operation has major contractors or suppliers who themselves source a major part of their work from outside their companies, they can use this form also.

When collecting this information, a sampling approach should be adopted. A representative sample of suppliers that cover the majority of the operation's spending should be contacted. The sample should be representative in terms of type of supplier, geography, size of purchase and skills required. The information gathered should then be grossed up to reflect total spend. It is not necessary to contact all suppliers, as this would be very labor intensive.

In some situations the suppliers may not wish to cooperate for reasons of commercial confidentiality. If sufficient assurances about treating information in confidence cannot be given, an alternative approach to estimating indirect employment can be used:

1. identify the annual turnover of the supplier through published accounts (this should be public information);
2. identify the supplier's total employment from company annual reports, websites etc;
3. calculate turnover per job by dividing total turnover by total employment; and
4. divide the size of the operation's spending with that company by the turnover per job figure to provide an estimate of employment generated by the operation's custom. This is a last resort and should only be done with significant suppliers.

As information will need to be collected from suppliers as part of the calculation of procurement spend, it is recommended that data collection for procurement and indirect employment be conducted simultaneously.

Table A1: Calculating Indirect Employment

Name of Contractor/ Subcontractor/ Supplier	(a) Number of NON-permanent On-site Staff ^{1,2}	Number of Off-site Staff			(e) Total Indirect Employees (a + d)	(f) Percentage of Employment that is Local
		(b) Total Number of Off-site Employees in Company ¹	(c) Percent of Off-site Business with the Operation	(d) Total Off-site Employees (b x c)		
1.						
2.						
etc.						
Total						

Notes

¹ Staff numbers should be expressed as full time equivalents – see above.

² Permanent on-site staff should be counted as direct employees.

Indirect Employment Created by Social Provision and Social Investment

In some cases mining projects also generate employment through social investment activity, for example by funding schools, hospitals/clinics, and business/employment development initiatives.

Identifying the number of employees (or, in the case of job creation schemes or other schemes that provide livelihoods, beneficiaries) generated by social provision or investment projects is a simple four-step process:

1. Identify the number of employees/beneficiaries of the project. This is the number of individuals who directly participate in the project (not including non-participating dependents).
2. Identify the average percentage of beneficiaries' incomes or employment that is derived from the project.
3. Estimate the percentage of the operation's contribution to establishing and maintaining the project. This can include in-kind contributions (such as land or time). To ensure that the answer is balanced, the operation should attempt to agree this with other project partners, including beneficiaries.
4. Calculate full time equivalent jobs using the following formula:
 - a. number of beneficiaries, multiplied by
 - b. percentage of incomes derived from the project, multiplied by
 - c. the operation's contribution to the project, equals
 - d. full time equivalent jobs.

For example, if a project had 200 beneficiaries who derived half of their livelihoods from it, and if the mine was responsible for 50 percent of the support provided, the employment generated would be:

200 beneficiaries x 0.5 (proportion of livelihoods) x 0.5 (mine contribution) = 50 full time equivalent jobs.

Table A.2 provides a format for calculating and summarizing employment from the social provision projects.

Induced Employment

The spending of employees with jobs created by direct and indirect employment and social provision generates induced employment in the local economy. This employment results from household spending on items such as:

- housing;
- food;
- clothing;
- leisure activities;
- personal services, such as hairdressing and cleaning;
- business services, such as banking;
- transport;
- utilities; and
- public services, such as education and healthcare.

As can be seen, whilst most spending is by employees themselves, the public sector may provide some services on their behalf (for example, education). Also, as with indirect employment, there is a 'multiplier' effect as the induced

Table A2: How to Calculate a Company’s Contribution to Employment from Social Provision

Name of Project	(a) Number of Employees or Beneficiaries from Project	(b) Average Percentage of Employees’ or Beneficiaries’ Incomes Derived from the Project	(c) Company Contribution to Establishing Project (Percent)	(d) Full Time Equivalent Jobs Attributable to Company Social Provision (a x b x c)	(e) Number of Jobs that are Local
1.					
2.					
3.					
4.					
5.					
6.					
etc.					

employment created by household spending creates further spending and employment.

It is possible to calculate induced employment using household surveys and economic modeling. However, this is a complex and time-consuming process. Therefore, if no other data exist, for the purposes of this process, induced employment should be assumed to be 165 to 250 per cent of the sum of direct and indirect employment¹³. This estimate falls within the bounds of published research on multiplier employment for large mines in developing countries. For example, if induced employment is 200 percent of direct and indirect employment, and:

- direct employment at the operation is 100;
- indirect (supply chain) employment is 80 jobs;
- indirect social investment employment is 20; then
- induced employment = 400; and
- total employment = 600.

As a general rule, induced employment tends to be much higher in developing countries than developed ones, and where the wages paid by an employer are significantly higher than local norms. In developed countries, induced employment multipliers would be expected to be well below 100 percent (5 to 20 percent is a more typical range in developed countries).

¹³ This is based on *Large Mines and the Community: Socioeconomic and Environmental Effects in Latin America, Canada, and Spain*, Edited by Gary McMahon and Felix Remy, IDRC/World Bank 2001. The country case studies undertaken for this project support the use of relatively high multipliers. If there is more accurate research that has been calculated for the operation (for example as part of a socio-economic impact study undertaken to obtain planning consent) please use this instead.

A2. Calculating Payments to Public Authorities

Introduction

This section provides guidance on how to calculate the payments made to public authorities. The section is broken down by payments covered under the Extractive Industries Transparency Initiative and others that are relevant to this project.

EITI Covered Payments

The first category of payments to report is defined as Scope One payments by EITI. These are defined in Table A3.

Table A.3: EITI 'Scope One' Payments

Scope 1 Benefit Stream	Reporting Template Reference	Further description
Profits taxes	i	Taxes levied on the profits of an Integrated Mining Company.
Royalties	ii	<p>Royalty arrangements will differ between Host Government regimes. Where the royalty arrangements are such that the Company is obliged to dispose of all production and pay over a proportion of the sales proceeds, these 'royalty' payments should be included in Section 1(c) of the Reporting Templates.</p> <p>Where the Host Government has a more direct interest in the underlying production and makes sales arrangements independently of the concession holder, these 'royalties' are more akin to Host Government production entitlement and should be reported under Section 1(f) of the Reporting Templates.</p>
License fees, rental fees, entry fees and other considerations for licenses and/or concessions	iii	<p>Payments to the Host Government and/or National State-Owned Company for:</p> <ul style="list-style-type: none"> • receiving and/or commencing exploration and/or for the retention of a license or concession (license/concession fees); • performing exploration work and/or collecting data (entry fees). These are likely to be made in the pre-production phase; and • leasing or renting the concession or license area.
Host Governments production entitlement	iv	<p>This is the Host Government's share of the total production. This production entitlement can either be transferred directly to the Host Government or to the National State-Owned Company. Also, this stream can either be in kind and/or in cash.</p> <p>Where a royalty arrangement means that the Host Government has a more direct interest in the underlying production and makes sales arrangements independently of the concession holder, these 'royalties' are more akin to Host Government production entitlement and should be reported under Section 1(c).</p>
National State-Owned Company production entitlement	v	<p>This is the National State-Owned Company's share of the total production. This production entitlement is derived from the National State-Owned Company's equity interest. This stream can either be in kind and/or in cash.</p>
Bonuses (such as signature, discovery, production)	vi	<p>Payments related to bonuses for and in consideration of:</p> <ul style="list-style-type: none"> • awards, grants and transfers of the extraction rights; • achievement of certain production levels or certain targets; and • discovery of additional mineral reserves/deposits.
Dividends	vii	<p>If dividends are paid to the Host Government as a Shareholder of the company in respect of shares and any profit distributions in respect of any form of capital other than debt or loan capital.</p>
Other significant Benefits to Host Governments	viii	<p>These Benefit Streams include:</p> <ul style="list-style-type: none"> • other taxes that are levied on the income, production, capital gains, sales, exports or profits of Companies, customs; • other royalty type arrangements • import duties; • withholding taxes related to dividends, interest/technical service fees; • registration fees; • stamp duties; and • environmental levies.

These benefits should be reported in the following template, Table A.4.

Table A.4: Reporting Template for Payments to Public Authorities

Line Ref	Category	Table A3 Reference	Volume	Value Total	National	Region	Local
Payments Covered by EITI Exclude tax levied on consumption (Value Added Tax/Sales Taxes)							
1	Benefit Streams from International and National State-Owned Company						
1a)	Profit taxes	i					
1b)	Royalties	ii					
	- in cash						
	- in kind						
1c)	License fees, rental fees, entry fees and other considerations for licenses/concessions	iii					
1d)	Signing bonuses and production bonuses	vi					
1e)	Dividends	vii					
1f)	Other payments to Host Governments, (specified as including payment made through production entitlements and other royalty type arrangements):	iv, v, viii					
Non-EITI Payments Exclude payments to public authorities in return for a commercial service (eg rail transport or power purchases if from state owned generators)							
2	Benefit/Payment Streams Specific to ICMM Resource Endowment Project						
2a)	Income taxes paid by workers						
2b)	Social security contributions to public agencies						
2c)	Import/export duties (if not covered under 1f)						
2d)	Property taxes (if not covered under 1f)						
2e)	Vehicle excise and fuel duties (if not covered under 1f)						
2f)	Natural resource charge uses such water abstraction charges or emissions permits (if not covered under 1fg)						
2g)	Hidden payments (such as mandatory use of state owned monopolies - for example in transport or refining - at above market rates)						
2h)	Stamp duties/corporate registration fees (if not covered under 1f)						
2i)	Other payments:						

For each of the payments listed above:

1. Measure how much was paid for each type of payment (in the most recent fiscal year).
2. Indicate the level at which these payments were made, (national, regional and/or local).

Note that:

- a. This varies significantly between each country; for instance, some countries will have a relatively streamlined approach with only one level of payment, whilst others may levy the same tax but at the local, regional and national levels.
- b. Sometimes national contributions eventually go to the local administrations. In these cases treat these as national level contributions, unless the allocation of funds are known exactly, for instance half national and half local.

This information can be accessed from the most recent financial reports and/or from the accounts department. If possible, also present these data for five and ten years in the past and for five and ten years in the future (even if estimates are rougher).

A3. Contribution to GDP and Exports

Introduction

Data on GDP and exports for the most recent fiscal year at the national level is available from the Ministry of Economy or Finance or the National Statistics Office for instance. If not readily available then there are Internet sources as described below.

Contribution to GDP

To calculate contribution to GDP:

1. Find out the GDP for the most recent fiscal year. This can be found on <http://unstats.un.org/unsd/snaama/SelectionQuick.asp>
 - a. Select the country you are in
 - b. Select "GDP, at current¹⁴ prices – national currency"
 - c. Select the most recent year
 - d. Submit
2. Calculate the retained value added from section 5.7 for the same year. Retained value added is the equivalent measure against GDP at the operational/company level because they are both measures of 'value added'.
3. Divide the retained value added by GDP to give the percentage contribution of the operation to GDP.

Contribution to Exports

To calculate contribution to exports:

1. Find out the national level of exports for the most recent fiscal year. This can be found on the Human Development Index website: http://hdr.undp.org/reports/global/2004/pdf/hdr04_HDI.pdf See Section 15 of the HDI report. This is expressed as a percentage of GDP for 2002. Therefore, multiply the percentage given by the corresponding level of GDP for 2002 – in Section 13 of the HDI report.
2. Find out the value of output from the operation that was exported in the most recent fiscal year.
3. Divide the value of output by exports to give the percentage contribution of the operation to exports.

If possible, also present these data for five and ten years in the past and for five and ten years in the future (even if estimates are rougher).

¹⁴ This is because comparisons will be made to current financial values relating to the operation.

Data Sources

The country data for these governance indicators can be accessed via the World Bank web site <http://www.worldbank.org> under the topic *public sector governance*.

The detailed sets of specific measures lying behind each of these six indicators are in some cases also publicly available. These can be accessed via the following web link:

<http://www1.worldbank.org/publicsector/indicators.htm>

Each case study should devote some time to the analysis of these indicators and provide some narrative assessment of the types of influence they are likely to have (positive or negative) on the outcomes of mining activity.

Wherever possible, and certainly in relation to issues such as Government Effectiveness and Control of Corruption, an effort needs to be made to differentiate the situation at National, Regional and Local levels.

For a broad description of the institutional aspects of the case study country's governance structures a further source of information is the World Bank's *Database of Political Institutions* (DPI). The DPI provides a large cross-country database covering 177 countries over 21 years and includes 113 variables providing information and measures for types of political systems, electoral rules, structure of the legislature and the executive, degree of centralization/decentralization, checks and balances, tenure, stability, political affiliation and fragmentation.

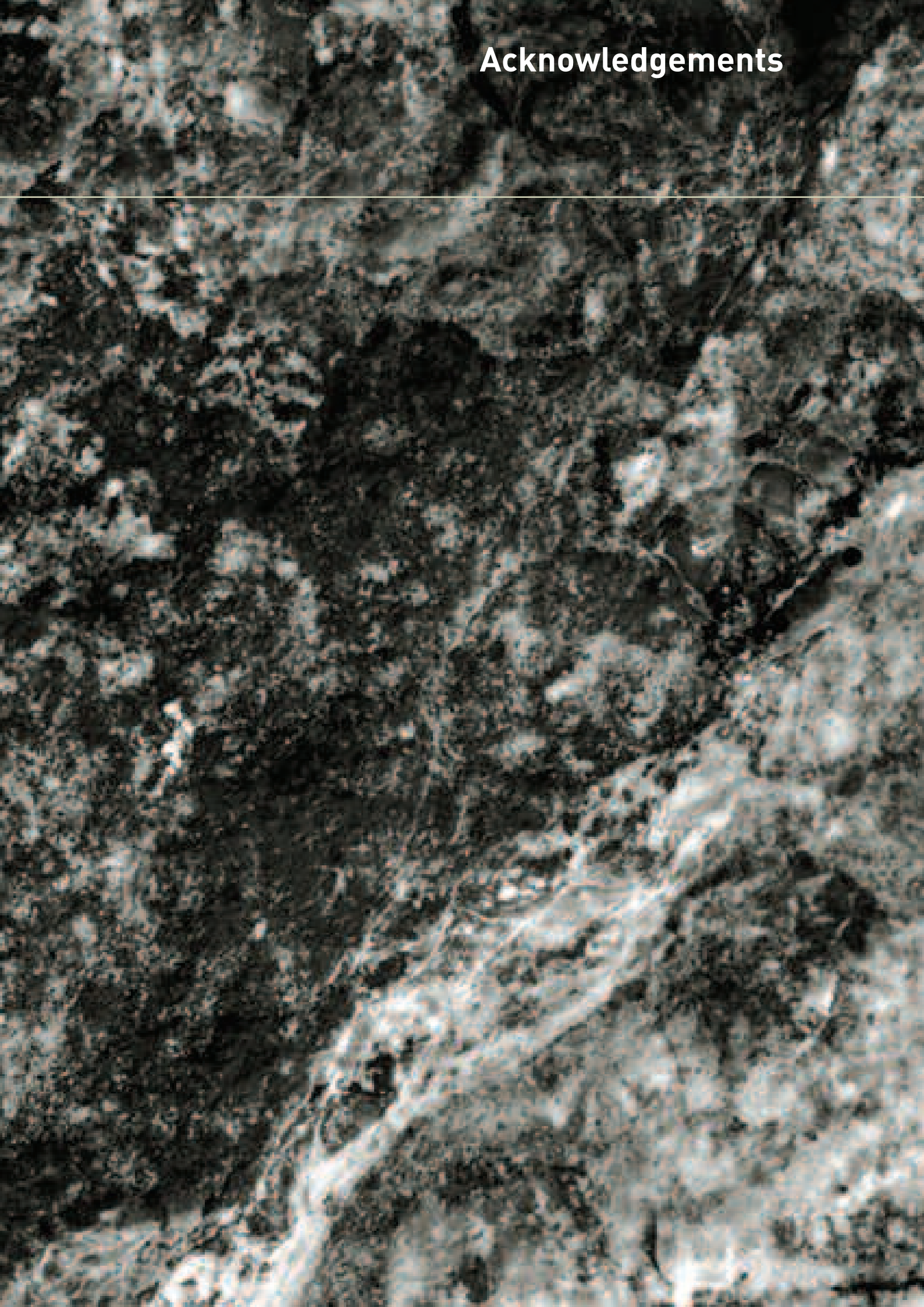
The dataset has been designed for the purpose of studying issues such as the determinants of democratic consolidation, the political conditions for economic reform or political and institutional roots of corruption. Again case study researchers should be on the look out for distinctions in this area as between different levels of government (National versus Regional). The DPI is available at <http://econ.worldbank.org/view.php?type=18&id=25467>

Suggested Reporting Template

Set out below is a suggested report outline for country case study work. For more detail on how previous authors have prepared reports using the methodology please see the existing country case studies on www.icmm.com

1	Introduction
1.1	Background
1.2	Objectives
1.3	Methodology
1.4	Consultees
1.5	Report Structure
2	Background
2.1	Brief History of the Country
2.2	Overview of the Country's Economy
2.3	Overview of the Country's Demography
2.4	Overview of Mining in the Country
3	The contributions of mining to economic growth and poverty reduction
3.1	Overview
3.2	Macroeconomic Performance
3.3	The Mining Industry's Contribution to National Government Revenues
3.4	Social Outcomes
3.5	Socio-economic Impacts of Mining at the Local Level
3.6	Conclusions
4	Discussion of links between mining investment, economic growth and poverty reduction
4.1	Overview
4.2	Discussion of Mining's Contribution to Economic Growth and Poverty Alleviation
4.3	Unresolved Issues With Respect to Social Development and Mining
4.4	Summary
5	Reasons behind success factors, challenges and constraints
5.1	Overview
5.2	Economic Policies
5.3	Governance, Legal and Institutional Development
5.4	Explanations Using the Governance Framework from the toolkit
5.5	Incomplete Governance and Institutions
5.6	Examination of Topics/Issues of Particular Relevance to the Country
5.7	Points Arising
6	Summary of the case study
6.1	Overview
6.2	Summary Sections on the Most Important Topics in the Case Study
	Annex Materials

Acknowledgements



Acknowledgements

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ICMM team

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Country Case Studies

Chile: Government of Chile, Mauro Valdes (Escondida), Jorge Zeballos (Escondida), Holly Lindsay (BHP Billiton)

Ghana: Government of Ghana, Joyce Aryee (Chamber of Mines, Ghana), Alan Fine (AngloGold Ashanti), Paul Hollesen (AngloGold Ashanti), Gertrude Makhaya (AngloGold Ashanti), John Owusu (AngloGold Ashanti)

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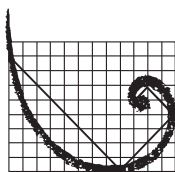
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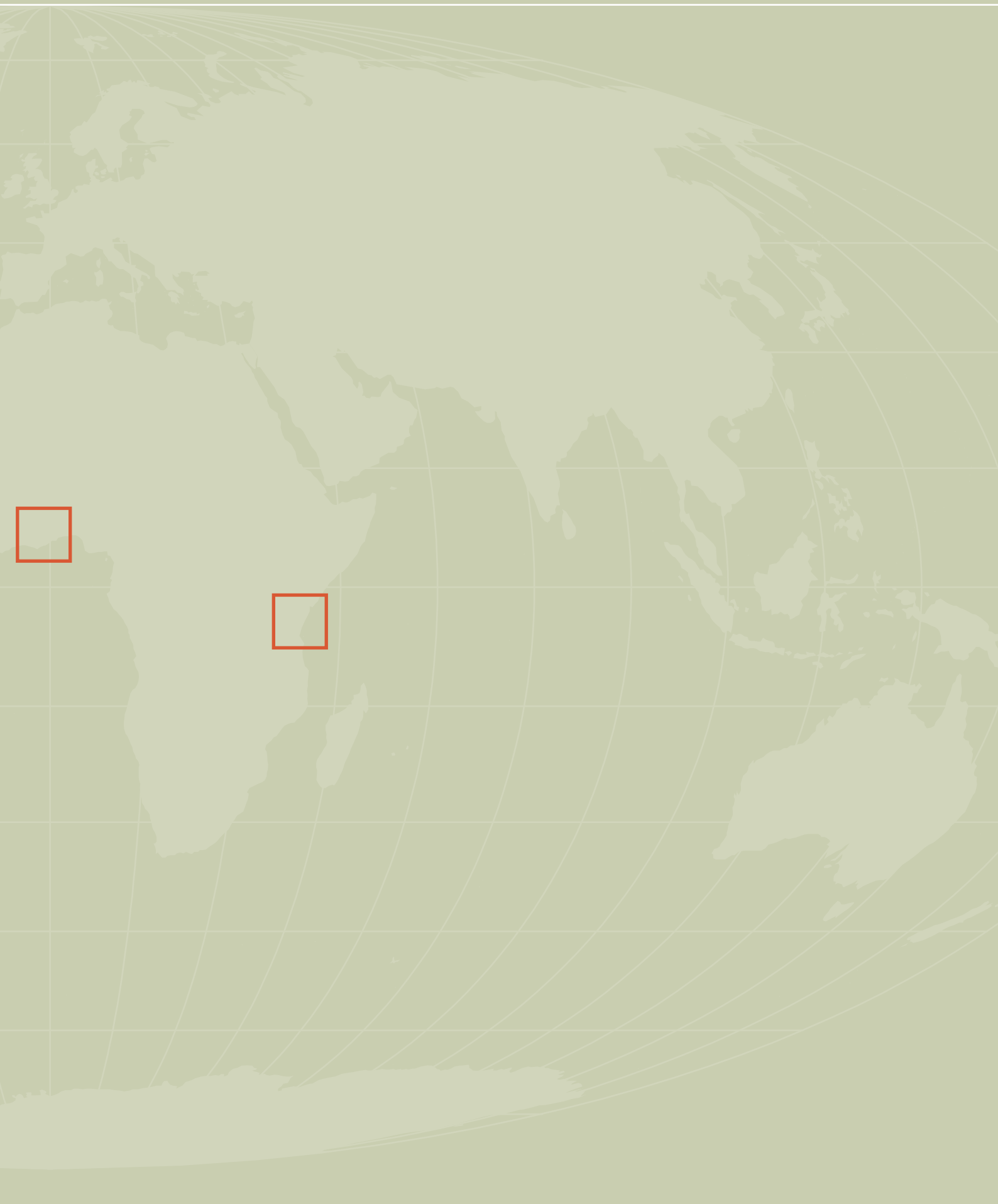
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