
A Quick Guide to Socio-economic analysis of a mining/ quarrying project



Employment

One of the most visible economic impacts of mining/quarrying operations on a community is the employment that it generates.

Employment is generated through the creation of jobs within the mining/quarrying operation itself, for instance during the exploration, mining/quarrying and closure/rehabilitation phases. These jobs are directly related to the mining/quarrying operation. However, there are jobs created outside of the 'gates' of a mining/quarrying operation. These are a result of the building of roadways to reach the mine/quarry, the construction of new homes for mines/quarries and their families, and the businesses required to service the families for instance.

The objective is to calculate the total employment generated by the operation.

This includes:

1. 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;

2. Indirect employment in the region comprising:

- Contractor employees working for the operation (staff on the contractor's payrolls who are employed to fulfil contracts at the operation);
- Indirect employment working at the operation's suppliers and any contractor's suppliers or contractors;

3. 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).

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/quarry/quarry 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/quarries there is substantial inward commuting amongst the workforce. Therefore, when calculating employment, the number of jobs that are local should be estimated.

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/ quarry 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 kilometres, whereas in remote areas where mobility is high, 'local' may cover communities over 100 km away. Therefore, a definition of local that is appropriate in the mine's/quarry's context should be adopted.



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.

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.

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.
- 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 labour 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/quarries 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 labour noted in earlier sections should also be carried through to this part of the assessment.

Socio-economic analysis / 1

Demographic and social change

- Has the population level or make-up of the population (e.g. gender, ethnicity, religion, language, culture, place of origin, residential location, age etc.) changed over time because of the mine/quarry?
- 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/quarry/quarry 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

- Has the health of the local community been affected by the mine/quarry?
- 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/ quarry provision compare with that provided by government or other companies?

Community resources

Has the mine/quarry used or damaged resources that were previously used by the local community to support their livelihoods? For example:

- 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/quarry/quarry responded?

Local infrastructure

What impact has the mine/quarry had on local social and economic infrastructure?

For example:

- 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

Are there any negative or positive environmental impacts upon the local community, and are these impacts equitably distributed? For example:

- Noise.
- Air pollution.
- Water pollution.
- Waste generation.

Local businesses

Has the mine/quarry contributed to the development of local businesses? For example, has it:

- 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

Are there any barriers that prevent the local community (or sections of it) from benefiting from the presence of mining operations? For example:

- A lack of appropriate skills.
- Inadequate infrastructure.
- Management practices at the mine/quarry.
- Access to capital.

Relations with government

What relationship does the mine/quarry 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?

Value of Procurement

Money spent by mining operations on procurement (purchasing and outsourcing) of goods and services from the domestic economy can be considerable.

Socio-economic analysis / 2

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/quarry:

- 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.

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

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 purchased 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 Spent

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.



Socio-economic analysis / 3

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).

Value Contributed to the Host Economy

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 labour/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.

Contribution to GDP and to Exports

Mining /quarrying can be a significant sector of the economy in any 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 by each industry, net of all inputs, including imported intermediate goods.
- Exports: The sale of domestically produced goods and services to another country.

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.

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.



Euromines

Euromines is the recognized representative of the European metals and minerals mining industry. The members' main objective is to promote the industry and maintain their relations with European institutions at all levels. Euromines provides services to its members with regard to EU policy and forms a network for cooperation and the exchange of information throughout the sector within Europe. The association also supports contacts with the mining community throughout the world.

Euromines members are large and small companies who with their subsidiaries in Europe and in other parts of the world provide jobs to more than 350,000 people. Their activities and operations produce more than 42 different metals and minerals.

Published by Euromines
Av de Broqueville 12
B-1150 Brussels
Tel 32 (0)2 775 63 56
Fax 32 (0)2 770 63 03
secretariat@euromines.be

© 2016 Euromines

www.euromines.org

