A toolkit for the prevention and mediation of conflicts in the development of the mining sector

RESPONSIBLE MINING

RESPONSIBLE MINING: A toolkit for the prevention and mediation of conflicts in the development of the mining sector

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FOREWORD

Prosperity and well-being are generated by people's knowledge and skills as well as by work. Economic growth has lifted countries from poverty, but at the same time many have been left disadvantaged, and natural resources have been consumed unsustainably leading to environmental and social harm. Therefore economic growth alone is not enough.

Finland's development policy and development cooperation promote an inclusive green economy that is based on sustainable use of natural resources and takes into account the carrying capacity of nature as well as secures the provision of ecosystem services. The challenges of the extractive industry are of particular essence.

In its partner countries, Finland supports good governance that also promotes economic activity, equal distribution of economic benefits and the building of social capital. A well-functioning legislation and tax system, anti-corruption rules as well as other measures to counter the informal economy all pave the way for an environment conducive to business. At the same time, they increase the predictability and confidence required by enterprises and investments as well as give incentives for creating decent jobs.

Today, about two thirds of the global minerals are being extracted in developing countries. Too often, pressing short-term needs for minerals and financial profits, together with poverty and governance-related problems, have prevented long-term mining development despite the fact that the resources generated through the development of the mining sector could contribute to the fight against the vicious circle of poverty.

Mining activities could have significant impacts on sustainable development. Mining can be a source of employment of local people, a source of state revenue, drive economic growth and develop remote areas. However, the significant environmental impacts of mining and unequal distribution of the benefits contribute to instability and can be root causes of conflicts. Corporations in the extraction sector could play a considerable role in catalysing good development. Those corporations that have strong ethical codes, commit to corporate social responsibility and report openly and transparently on the social and environmental issues can also strengthen good governance.

In addition to voluntary corporate social responsibility, the international standards and guidelines should be strengthened. At the time of this report, the European Union is finalizing transparency legislation that would require, for example, extractive companies to publish what they pay to the governments with which they operate. The United States, for its part, recently adopted the so-called Dodd-Frank Act, which requires oil, gas and mining companies listed on US stock exchanges to publish the payments they make to governments.

This report provides essential lessons and

guidance to companies and governments to reduce mining conflicts and to promote responsible mining. Interestingly, the toolkit highlights the fact that every mining challenge is very local but the critical issues related to responsible mining are inherently international: The toolkit arises from a particular situation in Central Asia where the extractive industry is a very important part of the national economies, but it is equally useful in all mining countries, including Finland.

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PREFACE

Mining companies have adopted the term "responsible mining" to describe their efforts to improve public and community acceptance — the so-called social licence to mine. The mine manager who was once concerned strictly with operational issues now must be able to interact with the community and generate the consent necessary to move the operation forward in a stable environment.

Mining conflicts can cause severe problems for mining companies, local communities and in many cases for national economies as well. Planning timetables and operational interruptions can become long and expensive, and local communities can suffer from uncertainties and adversarial conditions. The reality is that people have different interests and values, and mining conflicts are quite common. The environmental risks and impacts associated with mining can heighten tensions in a community.

The objectives of the toolkit are to help the parties to mining activities express their interests and concerns in a constructive way and to identify areas of mutual benefit. The idea is to contribute to the prevention or resolution of conflicts and ultimately to the economic and social development of a region in an environmentally responsible manner.

For the preparation of the toolkit, research teams from Finland, Switzerland and Kyrgyzstan analyzed various cases in Kyrgyzstan where ongoing or planned mining operations have created tensions among the parties. The findings in the field and the technical analyses of the research groups as well as the numerous interviews, site visits and consultations with mining companies and local and national institutions confirm the usefulness of the toolkit, and show that an environmental assessment needs to be complemented by a social assessment and active stakeholder participation. A profound understanding of all stakeholder concerns and motivations is essential to the prevention and mediation of conflict. Although this toolkit is based on experiences in Central Asia and makes extensive use of findings from case studies in the region, we consider it globally applicable, within the limitations naturally given by the fact that each case is unique.

This toolkit stresses the importance of social impact assessment, advocates for the creative use of mapping and presents conflict avoidance and mediation as inherent parts of the mine development process. We hope that the users of the toolkit find these new ideas useful and constructive in their efforts to reach agreements on responsible mining activities.

The Wider European Initiative of the Government of Finland promotes stability and prosperity through of ecologically, economically and socially sustainable development in the wider European region. In Central Asia, and beyond, reduction of risks to mining conflicts and is one of the key building blocks towards strengthened security, stability and economic development.

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INTRODUCTION

This toolkit promotes environmentally and socially responsible mining. The development of the toolkit was informed by research and field studies in Central Asia, a region endowed with vast mineral assets but struggling with poverty, political instability and conflict over natural resources. The overall goal of the toolkit is to avoid, reduce or manage conflict. Each discrete component of the process — situational analysis, stakeholder identification, impact assessment, conflict mediation and mapping — builds on practices established in the context of natural resources management.

The integrated approach to environmental and social assessment promoted by the toolkit could also guide the process of identifying environment and security issues in the mining sector, particularly factors and conditions that encourage social, economic and political stability and ensure the welfare of the population and the sustainable use of natural resources.

The Costs of Mining Conflicts

Over the past decade, strong local opposition has delayed or stopped mining projects on several continents. Perceived and actual environmental impacts created by mining operations are one of the most frequent causes for the local population to oppose new projects in their region. In particular in areas where people strongly rely on ecosystem services or have suffered from negative environmental impacts before, mining is viewed more critically. In addition, local communities fear erosion of community well-being, and the safety and economic disadvantages brought by mining projects. In many places communities report a lack of financial benefits to local business in spite of massive profits for mining companies and royalties for government. Such discrepancies in income distribution, alongside the increased cost of living due to the overall economic growth in a region, can create further triggers for conflict around the development of a mining project.

Conflicts can become costly for mining companies, and the first goal in managing conflict is to prevent escalation. The following table shows a number of the potential direct costs for mining companies and indirect costs for mining companies and others.

DIRECT COSTS*

- **Security:** Higher payments to security firms; staff time spent on security management

- **Risk management:** Insurance, loss of coverage, specialist training staff, reduced mobility and higher transport cost.

- **Material:** Damage to property or infrastructure

- **Opportunity:** Disruption of production, delays on imports

- **Capital:** Increased cost of raising capital

- **Personnel:** Stress and related illnesses, recruitment difficulties, higher wages, kidnapping, injury or death

- **Reputation:** Consumer campaigns, risk rating, share price, competitive loss

- **Litigation:** Expensive and damaging law suits

INDIRECT COSTS*

- **Human:** Loss of life, health, intellectual and physical capacity

- **Social:** Weakening of social capital

- **Economic:** Damage to financial and physical infrastructure, loss of markets

- **Environmental:** Pollution, degradation, resource depletion

- **Political:** Weakening of institutions, rule of law and governance

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* Source: Kapelus et al., 2011

COSTS OF CONFLICTS TO COMPANIES

Warning signs of conflict

Understanding conflicts within a company context will become increasingly important for business as mineral resources become more difficult to access and the combined forces of depletion and increased demand encourage more companies to operate in conflict-prone areas. The International Petroleum Industry Environmental Conservation Association (IPIECA, 2008) identifies some common warning signs of a growing or imminent conflict:

- *Expressions of frustration and grievance by communities — community leaders state they do not feel respected or that the company is not addressing expressed grievances effectively. This can be followed by stronger community demands, threats and hostilities.*

- *Physical reactions of local communities to incidents involving the company — demonstrations or vandalism justified by communities as protests at the behaviour of operations personnel. An increased frequency of such reactions may be followed by violence.*

- *High levels of gun crime in areas where company facilities are protected by armed guards.*

- *High levels of insecurity among the local population, combined with weak and/or biased government law enforcement.*

- *Incompetent and corrupt judiciary and/or paralegal institutions that reduce the ability of aggrieved individuals or groups to gain access to justice or to find just and peaceful solutions to disputes. This problem is exacerbated when courts are biased towards or against specific ethnic or religious groups.*

- *Increasing frequency of human rights abuses perpetrated by government agents or groups associated with the state. Such abuses may include arbitrary arrests, the use of excessive force by security forces or the curtailment of freedom of association and expression.*

Mining and Sustainability

Sustainable mining is a theoretical, but highly unlikely, possibility. The use of non-renewable resources — such as metals and minerals — can be sustainable if the use is declining, and the rate of decline is greater than the rate of depletion. As a practical matter, achieving sustainability in mining is a remote prospect, but numerous mining companies and industrial associations are working towards more responsible environmental, economic and social practices.

Important environmental considerations include long-term land-use planning (beyond the life of the mine), minimization of environmental impacts and the application of the polluter-pays principle for environmental damages and liabilities created during and after mining operations. Economic and social responsibility entails ensuring the equitable distribution of income, making appropriate investments in community development and preparing for the transition to alternative employment after mine closure. Government subsidies for mining can distort the economic viability of the subsidized operations in the long term. Social responsibility generally encompasses mine company guarantees related to workers' health and safety, and respect for fundamental human rights, cultures, customs and values.

Today, many renowned mining companies state their principles in public Corporate Social Responsibility (CSR) strategies. This trend emerged when local communities became increasingly opposed to the threats posed by irresponsible mining, and the practice has become a standard by which performance is measured. These CSR strategies were cited by concerned investors who prioritized sustainable investments over short-term money-making. There are now many success stories of big and small corporations working hand in hand with local communities, environmentalists, civil society groups and governments to create benefits and improve livelihoods while conserving the environment and preserving cultural heritage. This toolkit aims to contribute to improved transparency and communication, and to encourage constructive dialogue during which more mining companies can write success stories of their own.

Social Licence to Mine

Mining companies are increasingly embracing the concept of the social licence to mine and operate as a means to ensure economic feasibility, profitability and continuity with respect to their activities and potential local and community conflicts. There is as yet no consensus definition of the term, but many environmental NGOs consider "social licence to mine" to mean that the local community gives its consent prior to the permitting or development of a project. The mining industry defines the concept as follows (Lassonde, 2003): "Social Licence is the acceptance and belief by society, and specifically our local communities, in the value creation of our activities, such as we are allowed to access and extract mineral resources. . . . You don't get your social licence by going to a government ministry and making an application or simply paying a fee. . . . It requires far more than money to truly become part of the communities in which you operate."

Discussions on social licence to mine often refer to environmental impact assessment (EIA) and social impact assessment (SIA) as in the following definition (Shepard, 2008): "We propose the definition of 'social licence' to be a comprehensive and thoroughly documented process to have local stakeholders and other vested interests identify their values and beliefs as they participate in scoping the environmental impact assessment of the proposed project and in identifying alternative plans of

operations for the project. Notice that this does not stipulate the community, stakeholders, and other groups approve of and support the project. Such universal acceptance is virtually impossible, and not required in any other aspect of our economic, social, or political lives."

Development banks and financial institutions such as the World Bank, the European Bank for Reconstruction and Development and the International Finance Corporation recognize the need for social licences to mine. These organizations and such practitioners such as the International Council on Mining and Minerals have developed a number of principles and guidelines regarding the integration of social issues and a human rights-based approach into the work of extractive industries. Based on these principles they have developed and adhere to investment criteria that promote socially and environmentally responsible mining throughout their investment portfolios.

An operating company can gain its social licence to mine by using EIA and SIA to make informed decisions and by managing local conflicts in an open and transparent process that includes comprehensive public participation and input. This approach promotes good community relations, and mining organizations around the world are increasingly employing dedicated community relations teams to develop and maintain relationships with community stakeholders. This practice emphasizes greater dialogue, understanding and relationships with stakeholders and attempts to resolve real and perceived community concerns, impacts and risks. The field of community relations seeks to ground company actions in the people and places potentially affected by a development.

When authorities, local communities and NGOs comment on a proposed mining project, each frames their comments in a specific definition of "environment". As a result, what appears to be a controversy at a public meeting may well be the expression of concerns about different environments — economic, cultural or natural. The separate consideration of these concerns adds clarity to the analysis and paves the way for a more robust and comprehensive integrated impact assessment.

A recent World Bank report (Extractive Industries Review, 2003) warns that, "[w]ith the absence of adequate environmental regulation and laws, and the lack of capacity of governments to monitor what is going on, extractive industry operations may create serious environmental and social damage to their surroundings." According to the report, the lack of credible and easily accessible grievance mechanisms exacerbates this damage, undermines community trust in the developers and results in unresolved opposition that lasts in some cases for 30–40 years and creates a legacy of distrust. As part of its response to this situation, the World Bank recommends a holistic, multidimensional assessment approach that identifies the cumulative impacts of projects and the socio-economic linkages to environmental issues.

Environmental Licence to Mine

Public authorities validate the conclusions of environmental impacts assessments, and issue environmental licences and natural resource use permits that typically require the operator to meet certain operating conditions and use limitations and to implement certain measures for containment, minimization and avoidance of significant environmental impacts. An environmental licence to mine, for example, may include restrictions on waste disposal and on emissions and releases into the environment, and may require extensive containment measures. In addition to the operating conditions, the licence provides for an oversight system whereby the public authority assesses the

operator's compliance with the requirements of the licence.

The applicant for environmental permits follows the administrative procedures established by the public authorities, and presents whatever information the competent authorities require. The relevant public bodies may request specific information for their specific purposes, and the administrative procedures generally provide an opportunity for public participation. The public authorities then evaluate the information presented by the applicant. The information requirements, administrative bodies and public involvement can vary from country to country, but the general scheme is similar.

The preparation of an environmental impact assessment is basically the applicant's provision of information to the public authorities, and is an essential part of the decision-making for the issuing of a licence. For mining projects that may cause transboundary environmental impacts, international consultations should be conducted and the affected parties informed. The standards and practices for the submission of environmental impact assessments are well established, but each assessment applies to its specific set of circumstances, and the authorities evaluate the submissions within the context of those circumstances. When the authorities approve a mining applicant's EIA, they issue an environmental licence to mine.

The competent authorities — the administrative bodies that issue licences — may be centralized or decentralized. In centralized systems, one administrative agency controls environmental issues, sometimes with regional offices to manage different locations. In decentralized systems, the national government has little or no involvement, and the regional governments issue permits. Decentralized systems tend to allow greater public participation, and tend to be more transparent, but may entail co-ordination among several public authorities. In either system, the credibility of the public participation process is crucial: the environmental licence to mine is inadequate without the genuine acceptance of the local population.

Mining in Developing Countries and Central Asia

The availability of mineral resources is a fundamental requirement for the production of almost all the goods we consume. And while metals and minerals are used in almost every place on earth, they originate in relatively few locations. For those places with exploitable reserves, the operation of a mine can generate wealth and stimulate the economic development of the entire region. This is particularly relevant for developing countries with low levels of specialization and weak infrastructures. For them a mine often represents the largest source of foreign direct investment, and affords the opportunity to promote rural development by building infrastructure. And the national budget reaps tax, royalty and licensing incomes that can be used for development in other regions for the overall development of the country.

But while mining can provide unmatched opportunities for development in poor countries and yield attractive benefits for the companies involved, the scale of mining — both in physical and financial terms — can be extremely large, and like few other activities, mining has the potential to cause severe environmental and social impacts simultaneously. These impacts can be mutually reinforcing and spur or aggravate local tensions that may result in conflict.

By its nature, mining creates huge volumes of waste — both rock and soil that is removed to obtain mineral ores, and by-products of production. Some of these wastes are harmless, but others, particularly the tailings, can be physically or chemically hazardous — or both.

As a number of accidents related to tailings dams in recent years have shown, safe storage of mine waste is a difficult task. The mining by-products, which are often toxic themselves, and chemicals used for the extraction process, may enter the biosphere via water and air. In some cases the mine itself is a ghastly sight, replacing pristine ecosystems, farming or grazing land, or human settlements with a barren landscape or a lifeless hole in the ground.

Mine workers often endure harsh working conditions, including the effect of high mountainous or desert climates, and are exposed to dust and fumes from which they can contract life-threatening diseases. Many travel great distances to their workplace, disrupting families and social coherence, both in their place of origin and in the mining town where they reside. Women in mining communities are often subordinate and subject to domestic violence. The increase of alcoholism in mining towns and isolation, hard work and a harsh environment fuel abusive behavior. Despite incomes that can be significantly higher than for other workers in such regions, many people in these situations do not experience a higher standard of living.

In some places, the development of a mining operation does not have much of an impact on the national and local economies. Some mining companies bring in their own foreign workforce who live in camps isolated from the surrounding community and supplied with goods and services sourced from their country of origin. Some mining communities in countries with weak governance experience economic losses when mining tax and royalty fees are inappropriately distributed by central government due to corruption, negligence or an imbalance in negotiating capacity. There are many examples where host communities experience health effects or social or environmental damage while others receive the social and economic benefits.

The countries of Central Asia are facing these issues as they pursue their mining opportunities in the context of broader economic development. Kazakhstan is focusing on uranium mining in the largely uninhabited region in the middle of the country, and on the continuation and expansion of copper, iron, lead and bauxite mining and the production of gold as a side product of other mineral processing. In Tajikistan, strong silver reserves and high silver prices make for a priority, and the country expects to have the Koni-Mansur silver mine fully operational soon. Tajikistan is also opening up its gold deposits to foreign geo-exploration and mining companies. Kyrgyzstan hopes to commission more medium-scale operations in order to double its gold production, to restart rare earth production (which declined after independence) and to negotiate with China regarding development of iron reserves near their border.

The situation in Kyrgyzstan has all the elements that a developing country might encounter in the mining sector. Mining legacy problems left over from the Soviet period are still looking for a solution, and potential border conflicts inhibit development in some regions. Prospective mining operations in some areas may be inconsistent with current uses — agriculture or nature reserves — and the responses of local communities to proposed mining run the gamut from total opposition to full support. Relations between mining companies and both local and national government are uneven, and the requirements for permits are a moving target. Regulation and enforcement are spotty, and the role of the mining companies in the provision of services is evolving. And in the high-elevation mining areas of Kyrgyzstan, global warming is melting the permafrost and creating new engineering and environmental challenges.

As mining companies work to develop the abundant opportunities in Central Asia they will find this toolkit and its companion volumes invaluable resources.

Purpose of the Toolkit

The toolkit is designed to help all users — mining companies, national and local governments, NGOs, local community representatives and international bodies — build their capacities to identify tensions and to prevent or mediate conflicts. The application of these tools can reduce the potential for conflict at every stage of the process from feasibility studies to environmental impact assessments all the way through ongoing mining operations — when corporate social responsibility becomes a matter of routine management. The toolkit is practical, easy to use and accessible to a broad range of users including those who have little or no prior experience with assessment or mapping tools.

The mining company is always the principal player in the development of a mine, and the behaviour of the company is crucial regardless of what other factors are present. The mining company determines the scope of a project, and its decisions profoundly affect the environmental, social and economic outcomes. The primary targeted user of the toolkit is therefore the mining company.

In their role as regulators, governments at all levels maintain their own set of tools for regulating and monitoring mining operations. Regulations are important in the mining sector, but they are only one of many ways that governments may contribute to mining development. The toolkit helps government officials see beyond their regulatory frameworks to find creative solutions to particular local problems and to help reduce the potential for conflict among the parties.

Members of the local community where a proposed mining operation is to be located are in a position to benefit from the enterprise and to experience any of its negative consequences. Depending on their experience and their attitude towards mining, they may be too passive or too aggressive, and in some cases they can be targets of misinformation, but in any case their participation is a fundamental component of the planning process. The toolkit can assist local community members to understand the process itself, and to participate constructively in the various assessments.

Local NGOs with neither extreme pro- nor anti-mining views are particularly well placed to support the local community and to promote local concerns while maintaining their traditional role as watchdogs. With their specialized knowledge and their access to officials, local NGOs have the credibility to act as a bridge between the community and the mining company, and may be especially helpful in assisting to educate locals and in moderating roundtable discussions. The toolkit complements the knowledge NGOs already bring to the process, and paves the way for the other parties in the process to benefit from the contributions that the NGOs make.

The mine development process may occasionally benefit from the services of a facilitator — someone who guides the process, and assists the participants in negotiating an agreement. Cases where the conflicts are serious and the parties appear to be intractable call for a professional mediator. But in some situations less formal interventions may be sufficient. The conflict mediation section of the toolkit discusses this issue in detail.

When to Use the Toolkit

There are basically two times when the application of the toolkit can smooth the mining development path. The first and best time is before or during the feasibility studies or formal EIA and project planning phase, before any work is done. In these circumstances, the toolkit can guide the entire project from scoping through to the development of a management plan, and helps the users anticipate, avoid or resolve conflicts.

The second time to apply the toolkit is whenever a problem or conflict arises. Whether or not the toolkit has been guiding the mine development process, the participants may sometimes find themselves in a conflict situation that they do not completely understand. The application of the toolkit can help the participants get the process on track, typically by reviewing what has happened so far through the toolkit lens. Such a review starts with a situational analysis to discover whether an essential step has been overlooked, and then proceeds to stakeholder identification and analysis to ensure that all the necessary stakeholders are engaged.

Even in carefully executed processes, the social and environmental impact assessments may spark disputes, and a review of these assessments in light of the stakeholder participation component of the integrated impact assessment may reveal the root of the conflict. The toolkit mapping and conflict mediation tools may also move the process forward.

THE TOOLKIT

The toolkit takes a participatory and integrated approach to impact assessment in an effort to help mining companies and central authorities come to understand what the community thinks is relevant to the development of a mine in their area. The approach is designed to assist the participants to identify and reduce tensions, to avoid conflicts in land-use planning and to promote communication among local communities, central government and mining companies. The toolkit takes a practical approach to solving existing problems and to developing business practices that prevent problems from occurring.

Overview

Each mining development project begins with a situational analysis, typically a desk study that describes the project and sets the context — regulatory, environmental, historical, regional, local and socio-economic. The stakeholder identification and analysis come next, and once the stakeholders are engaged, the situational analysis may benefit from revisions based on stakeholder views. More commonly, the stakeholder engagement leads directly to the more substantive work of the integrated impact assessment. The following figure depicts the overall process.

The heart of the toolkit process is the integrated impact assessment — the combination of social and environmental assessments that relies heavily on stakeholder participation. The social and environmental impact assessments may entail desk study, field work and stakeholder consultations in whatever proportions suit the project. The integrated impact assessment produces the analytical basis for the management plan that follows.

The application of mapping tools may occasionally enhance the situational analysis or stakeholder identification and analysis, but they are primarily used to advance the integrated impact assessment. Participatory maps capture stakeholder perceptions and values; scientific maps contribute to the analysis; and communication maps convey the findings.

These first three steps in the toolkit process — situational analysis, stakeholder engagement and integrated impact assessment — are intended to help mining developers avoid conflicts in the development of a project. When — despite everyone's best efforts — conflicts nevertheless arise, the conflict mediation tool comes out of the kit. Conflict mediation, which can be used in conjunction with participatory mapping, can move the integrated impact assessment forward by resolving conflicts and ensuring that the assessment accounts for stakeholder concerns. The conflict mediation tool can also be used to resolve issues related to the management plan.

Mining companies or authorities may find unexpected conflicts arising at any time. In those cases the toolkit provides the framework in which to review the process as it has developed to the point of conflict.

The product of all this work is a management plan that guides the mining development in a responsible manner.

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Special Case: The Use of the Toolkit
in the Geo-exploration Stage

The process of identifying and quantifying mineral resources — geo-exploration — is an essential phase that precedes mine development. Some mining companies conduct their own exploration, and others purchase the development rights from the licence holder after a geo-exploration company has analysed the prospects. In either case the company conducting the exploration and the company that develops the deposits may benefit from the use of the situational analysis and stakeholder engagement parts of the toolkit.

While not nearly as disruptive as actual mining operations, geo-exploration creates an obvious presence in a community, and may raise expectations among the local population as it raises dust with the occasional explosion. Some communities make no distinction between exploration and mining operations, and unless the exploration company engages the community directly, it runs the risk of alienating the local population before it has even established the feasibility of developing a mine. Any ill will that arises in the exploration phase is likely to undermine subsequent efforts to engage the local stakeholders in a constructive way.

Inversely, any goodwill generated during the exploration phase is likely to smooth the way for effective stakeholder engagement in the mine development phase. The advantages of early stakeholder engagement to a company that conducts its own exploration are obvious — establishing its good intentions and credibility, and generating goodwill among the community will pay dividends as the mine development process moves ahead.

A similar dynamic animates the process when the exploration company intends to sell the development rights. The failure to engage the community may diminish the value of the mining prospects by creating animosity toward mine development, while successful engagement may enhance the value by establishing an atmosphere of cooperation and goodwill.

The exploration phase does not warrant a full-blown application of the toolkit, but rather a simplified situational analysis and preliminary stakeholder engagement. The main ideas are to establish a positive relationship with the community, and to clarify the role of the exploration phase in the overall mine development process. Local authorities, government regulators and representatives of NGOs may be effective in assisting the exploration company to communicate its role.

SITUATIONAL ANALYSIS

In this toolkit, the situational analysis is typically a desk study that describes the various elements of a proposed project. It sets the regulatory context for the project by identifying the legal requirements, policies and conventions to which the project must adhere, and surveys the relevant environmental, historical, regional, local and socio-economic issues. This step precedes stakeholder identification and analysis, and may be revised after the stakeholders are engaged. A good situational analysis helps a mining company understand how the effects of a project are likely play out in its specific location, and to anticipate where conflicts may arise.

THE SITUATIONAL ANALYSIS QUESTIONS

A good place to begin the situational analysis is by defining the study area to include everywhere likely to be affected significantly by the project. This definition of the study area then guides the responses to the questions asked in the situational analysis.

1. What are the characteristics of the proposed project?

Identifying the characteristics of a proposed mining project entails the preparation of a detailed statement of the expected activities starting with the planning phase and continuing through construction, start-up and commissioning, operations and closure. The statement includes:

- Objectives and physical characteristics of the project

- Production processes and resources used by the project

- Estimates by type and quantity of expected residues and emissions to water, air and soil

- Estimates of emissions of noise, vibration, light, heat and radiation

- Risks of accidents and hazards

2. What national regulatory frameworks, policies and conventions apply to the project?

Mining operations are commonly subject to a number of policies and regulatory frameworks such as mining codes and environmental regulations. (See the toolkit companion volume, Mining Regulation in the Kyrgyz Republic, for a thorough regulatory analysis.) Good communication on compliance enhances the company's credibility and the community's acceptance of the operations. Compliance helps validate the social and environmental performance of the mine operator. A preliminary regulatory assessment includes:

- An enumeration of policies and regulations applicable to the project

- A review of compliance requirements for:
    - Permits
    - Planning and reporting
    - Records maintenance
    - Recycling and reclaiming

3. What are the historical, regional, local and socio-economic contexts in which the project takes place?

The subsequent impact assessments build on a good understanding of the context in which the mining development takes place. The situational analysis therefore collects basic information regarding historical, cultural, political, economic and environmental factors that shape local perception, decision-making and stakeholder motivations. The situational analysis also examines current and past mining operations in the area to review their impacts to analyse how the experience can be applied to the proposed project.

4. What are the available sources of information for the situational analysis?

The wide range of information necessary to obtain a useful result calls for a thorough review of existing data sources. These sources should include local authority records, studies carried out by or for conservation agencies or special interest groups and other publicly available data. Environmental impact studies of projects in close proximity are particularly helpful. An inventory of the local environmental and social situation supported by comprehensive and open documentation prior to the start of geological exploration or a mining project may help minimize the potential for conflict situations in the future. The specific tasks for data collection include:

• Identifying the relevant information sources

• Checking the access to the sources

• Assessing the quality, reliability and transparency of the information

• Detecting information gaps

• Specifying information needs and solutions for data generation

• Ensuring adequate referencing

5. What is the environmental context of the proposed project?

A basic understanding of environmental conditions surrounding the mine is essential for the subsequent environmental impact assessment. To provide that understanding, the situational analysis should:

• Describe the land to be occupied by the project and the surrounding area
  - Inhabitants
  - Topography
  - Geology and soils

• Describe fauna, flora and habitats

• Describe the hydrology, water quality and the proposed use of any water resources that the project may affect

• Describe the local climatic and meteorological conditions and existing air quality

• Describe the existing situation regarding light, noise, heat and electromagnetic radiation

• Reference the previously identified locations or features of sites of archaeological, historical, architectural or cultural importance in the area

• For any of the above aspects of the environment, describe any future changes that may occur in the absence of the project

• Illustrate these descriptions as necessary on appropriate maps

STAKEHOLDER ENGAGEMENT

The rationale for using a participatory approach to project development is that those who participate in the decision-making process are more likely to embrace the outcomes. But a poorly designed and managed participatory process is likely to be ineffective at best, and may result in negative social and environmental outcomes and in greater risk of conflict. A well-designed participatory approach accounts for local conditions, and identifies all potential participants, invites them to join the process and ensures that they have the opportunity to express their needs, expectations and concerns. An effective participatory process therefore begins with stakeholder identification and analysis.

Early engagement with stakeholders helps companies build trust and mutual respect, and lets the stakeholders know that the company intends to take their views seriously. Some companies are now starting their stakeholder engagement prior to exploration and feasibility studies, and are finding that rather than unnecessarily raising expectations — which may have already been raised — they are influencing public perceptions and setting a positive tone. If the first engagement with stakeholders occurs after the emergence of a conflict, the company may not have developed a level of credibility and trust sufficient to resolve the conflict effectively. And if the company waits until its reputation is at risk before seeking support from NGOs or government, it may have waited too long.

Identifying the Stakeholders

Each local situation is unique, and the same stakeholder group may not be an appropriate participant from one mine to the next. Experience shows that new stakeholders may emerge at any stage — following a company's decision to pursue a mining project, during the assessment processes or even after construction. By conducting stakeholder identification, the regulators and mining companies can anticipate who the stakeholders might be, get them involved in the process and avoid the disruptions caused by new participants arriving late to the proceedings. Recognizing that some stakeholders may elude the initial identification process, the toolkit recommends that stakeholder identification be an ongoing activity.

TECHNIQUES AND APPROACH

A project's stakeholders fall into two broad categories — those likely to be directly or indirectly affected by the development by virtue of their proximity, and those who have an interest in mine development, environmental security or any other issue associated with the project. While the first set of stakeholders has a geographic connection to the project, the second set may be located anywhere.

1. Use the definition of the study area prepared in the situational analysis to provide the geographic basis for the identification of stakeholders.

This area may be expanded to include any areas that may be influenced by the proposed mining development. The situational analysis may help distinguish between those directly and indirectly affected.

2. Identify prospective stakeholders on the basis of interest.

Some mine development projects may generate interest and opposition from stakeholders in other parts of the country, or from other countries altogether. The potential influence on the project from these stakeholders may be substantial, and including those groups or organizations that are not adversely affected, but whose interests qualify them as stakeholders is important.

Stakeholder Analysis

In bringing stakeholder analysis to the attention of regulators and mining companies, the toolkit attempts to help these principals avoid the situation of not knowing who is doing what. The regulators and the companies may find that informal investigations can help identify potential stakeholders and any silent actors in the community, and that social research may reveal the relationships among the participants. Stakeholder analysis can assess the importance of key people, groups or institutions that may significantly influence a project or an impact assessment. The toolkit also suggests that outsiders with both credibility and the power of persuasion may be useful partners in the process. The Kyrgyz experience demonstrates the dangers of underestimating the importance of local differences and of not knowing the important players who should be included as stakeholders.

TECHNIQUES AND APPROACH

The International Finance Corporation good practice handbook on stakeholder engagement suggests a consideration of the following questions in prioritizing stakeholders (IFC, 2007):

- *What type of stakeholder engagement is mandated by law or other requirements?*

- *Who will be adversely affected by potential environmental and social impacts in the project's area of influence?*

- *Who are the most vulnerable among the potentially impacted, and are special engagement efforts necessary?*

- *At which stage of project development will stakeholders be most affected (e.g. procurement, construction, operations, decommissioning)?*

- *What are the various interests of project stakeholders and what influence might this have on the project?*

- *Which stakeholders might help to enhance the project design or reduce project costs?*

- *Which stakeholders can best assist with the early scoping of issues and impacts?*

- *Who strongly supports or opposes the changes that the project will bring and why?*

- *Whose opposition could be detrimental to the success of the project?*

- *Who is it critical to engage with first, and why?*

- *What is the optimal sequence of engagement?*

Communications with Stakeholders

Wide stakeholder participation in the assessment process improves the chances for acceptance of the results, and helps overcome a common problem with past assessments — the inability to communicate with the target audience. Experience shows that when the presentation of information is too complex, the audience loses interest and the information loses its power to persuade. The professionals who develop and present technical information may not understand how the audience interprets — or misinterprets — the information they present. Stakeholder participation can improve communications between local community members and the professionals who prepare technical reports, and can lead to mutual understanding.

The failure of central authorities and mining companies to take local information seriously can lead to seriously flawed results — land-use plans that are erroneous or incomplete, for example — that cause problems later and fuel further distrust. Narrowly construed assessments based on legal requirements to the exclusion of local knowledge may omit consideration of areas of local concern such as small springs or places of cultural value. The toolkit stresses the importance of consultations with local communities. In these consultations the results of social impact assessments can be used to focus the discussions to the issues that are most important for local stakeholders. Companies should carefully review their technical communications to ensure that they target the needs of local users, and that the companies help local users understand the mining point of view.

TECHNIQUES AND APPROACH

1. Take a proactive approach.
Initiate efforts to engage stakeholders at the earliest possible time to establish credibility and to demonstrate a commitment to consulting the community. Mining company departments should interact with communities as a uniform team. Company staff responsible for stakeholder communication (often called community liaison officers) should be carefully selected and have a willingness to listen, should understand the local context and should possess diplomatic skills.

2. Demonstrate a commitment to the stakeholder engagement process.
Identify those in the company with responsibilities for the mine development project, and specify the steps the company will follow. Advise stakeholders of timeframes, and alert them to what the next steps will be.

3. Provide a range of opportunities for participation.
Stakeholder consultations can be informal discussions in informal settings, or formal sessions in workshops or public hearings. Some combination of the two may be effective in most situations.

4. Maintain transparency in all dealings with stakeholders.

Transparency is the most effective preventive measure for keeping misperceptions and rumours from undermining development efforts. A transparent approach helps to identify community issues of concern before they become grievances. International Alert, a leading independent peacebuilding organization, recommends the following approaches (International Alert, 2005):

• Booklets, video and audio that explain in simple language and colourful pictures the operational process

• Bulletin boards that explain hiring and tender procedures

• A public information office in a nearby village where anybody can make enquiries about company operations

• Visits to each community in the operating area, and use of video and other media to demonstrate what operations will look like when complete

• A to-scale model of what the site will look like after closure and environmental repair

Further Reading: Stakeholder Identification and Engagement

Caribbean Natural Resources Institute, 2004: ***Guidelines for stakeholder identification and analysis: A manual for Caribbean natural resource managers and planners***. Port of Spain, Trinidad, Caribbean Natural Resources Institute. Available from www.canari.org/Guidelines5.pdf. — Designed for resource managers in the Caribbean region, this guide provides a step-by-step approach to stakeholder identification and analysis, and offers five ways that stakeholder analysis can be adapted — analysing relationships; conflict analysis; analysing power and power relationships; understanding equity issues; and designing communications plans.

International Finance Corporation, 2007: ***Stakeholder engagement: A good practice handbook for companies doing business in emerging markets***. Washington, International Finance Corporation. Available from http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_handbook_stakeholderengagement__wci__1319577185063. — This handbook targets businesses seeking to improve their engagement with external stakeholders, and is an excellent source for mining companies that want to operate in Central Asia. Based on IFC experience, the handbook covers stakeholder identification and analysis, consultations, negotiations and other relevant topics.

National Oceanic and Atmospheric Administration Coastal Services Center, year: ***Introduction to stakeholder participation***. Charleston, SC, National Oceanic and Atmospheric Administration Coastal Services Center. Available from http://www.csc.noaa.gov/cms/human_dimensions/. — This brief guidance document warns against the stereotyping of stakeholders,

and provides practical suggestions for a simple stakeholder analysis. Developed in the context of coastal resource management, this document is nevertheless useful in a wide range of settings.

United States Environmental Protection Agency, **Public Participation Guide**. Available from http://www.epa.gov/international/public-participation-guide/index.html. — This toolkit is aimed at government agencies, and is organized to help users design and implement meaningful public participation programmes. It is available on the Web, and provides links to other useful sites.

World Resources Institute, 2009: **Breaking ground: Engaging communities in extractive and infrastructure projects**. Washington, World Resources Institute. Available from http://www.wri.org/publication/breaking-ground-engaging-communities — WRI analyses existing community engagement standards and guidance, and finds that key gaps remain in the knowledge base and on-the-ground application of community engagement standards. Based on this analysis, WRI develops seven Principles for Effective Community Engagement for extractive and infrastructure projects.

INTEGRATED IMPACT ASSESSMENT

Social impact assessment, environmental impact assessment, community participation and conflict mediation are widely used approaches in natural resource management around the world — and in the mining sector. In most cases, however, these approaches are used separately, often by different stakeholders. The toolkit integrates these approaches to achieve the maximum benefit that each offers.

All these approaches typically deal with multiple stakeholders with differing interests. The integration of the approaches creates opportunities for innovative conflict resolution. Negotiation and mediation, for example, can resolve potential social and environmental conflicts documented by impact assessments and discussed with stakeholders.

Providing access to information, communicating effectively and encouraging participation by all stakeholders in the assessment improves transparency and may ease tensions stemming from mistrust and exclusion. An in-depth understanding of the socio-economic framework provides the basis for environmental assessments to pinpoint when environmental issues are more likely than not to pose a threat of increased tension and conflict or, conversely, when agreement on environmental issues may serve as a vehicle for conflict mediation. An effective mediation process recognizes the key institutions and stakeholders and their respective roles in the tension — how they contribute to the conflict, how they could help to reduce tensions and which ones might become effective mediators.

Integrated impact assessment considers the potential environmental and social concerns related to mining operations based on the characteristics of the affected area and on the expected operational impacts described by the situational analysis. The investigation and description of effects should focus on the five main environmental and social resources — humans, communities and cultural heritage; flora and fauna; land use and soil; water; and air — and the interactions among these resources. The analysis should indicate all potential effects: direct and indirect; secondary; cumulative; short-, medium- and long-term; permanent and temporary; and positive and negative.

Social Impact Assessment

The aim of social impact assessment is to understand how a proposed mine will change the life of residents, communities and regions. The information in an SIA helps to develop mitigation, adaptation or compensation measures for the harmful social impacts.

Social impact assessment is particularly relevant for mining companies because the scale and duration of resource extraction projects usually create a range of complex social impacts, many of which are linked with environmental impacts. Environmental assessments are well established, but social assessments, when they are used at all, tend to be weak and undervalued. Limited in scope to the recitation of survey information, these social assessments are often little more than simple descriptions of an area with no real sense of the local history and culture, and no appreciation for the values attached to natural places or for how conditions may differ from one area to another. This approach to social assessments fails to accommodate local concerns, and creates the resentment and opposition that increase the risks for the mining companies.

A proper social impact assessment is conducted by professionals with knowledge of social science methodologies. It builds on the situational analysis by developing a fuller understanding of how the proposed project affects the area, and by forecasting the social changes that may result from the project. In turn, the SIA provides the foundation for elements of the management plan — mitigation, monitoring strategies and social development plans, for example. Social impact assessment also helps communities benefit from changes that mining development may bring.

The activities typically undertaken by an SIA process involve (Esteves et al., 2010):

• Gaining an understanding of communities to be affected by the policy

• Assisting integration between economic, environmental (bio-physical) and social development

• Scoping the key elements of the social environment likely to be significantly impacted by the policy

• Forecasting the social changes that may result from the policy

• Estimating the significance of the predicted changes, and determining how affected groups and communities will respond

- Identifying ways of mitigating potential impacts and maximizing positive opportunities

- Developing a monitoring plan to track implementation, variations from mitigation actions, unanticipated social changes/impacts

- Putting processes in place to enable the proponent and stakeholders to develop action plans to deal with the intended and unintended social consequences, establish respective roles and responsibilities throughout the implementation of action plans and maintain an ongoing role in monitoring

The SIA is concerned with the effects that a mining project may have on how people in a community live, work, play and interact with one another on a day-to-day basis, and on the community's shared beliefs, customs and values. Social impact assessment should differentiate among the various phases of the mine lifespan — building, operations and closure.

The typical SIA process has four phases:

- Scoping of the key elements of the social environment likely to be affected by the project

- Social profiling and baseline studies designed to understand the communities and stakeholders potentially affected by the activity

- Identifying, predicting and evaluating the likely impacts and their scale and significance

- Devising the management strategies incorporating the results of the assessment across all aspects of the business

Data Collection Methods in Social Impact Assessment

Quantitative data (facts and figures) and qualitative data (local knowledge, perceptions, feelings, ideas and aspirations) are key elements in social impact assessment. The main sources for these data or methods for their collection include the following:

- Community consultation

- Survey research

- Informant/stakeholder/topic interviews

- Participatory group exercises

- Census data

- Geographical data (including maps)

- Local and national statistics

- Documentation from non-governmental organizations (NGOs) and community-based organizations

- Local and oral histories

- Newspaper reports

- Previous social science research

THE SOCIAL IMPACT ASSESSMENT QUESTIONS

1. What are the population impacts?

A consideration of how the proposed project may affect the local population includes the following elements:

• Projections of the changes in the number of people

• Projections of the changes in population density

At a minimum, these projections should consider:

• Urban and rural areas

• Migration (in and out)

• Age, gender and social groups

• Family structure

2. What are the employment impacts?

A consideration of how the proposed project may affect the employment includes the following:

• How much employment and new firms will mining activities bring to the larger region and local communities?

• How much of the workforce are likely to come from other regions or countries?

• What kind of work is offered? Is the work permanent or short term? What kind of special skills and education is needed?

• Is some other local field of employment losing employment possibilities or workforce (tourism, agriculture)? If so, what is the reason?

3. How will mining affect local community development?

A consideration of how the proposed project may affect the local community development includes the following:

• Where will the mineworkers be living? Is there a need for new housing nearby?

• Do the mineworkers commute long distances? Do they need temporary accommodation camps?

• Is it probable that the mine will create a new community or village; will the mining employees and their families become part of existing communities?

• How is the life of local communities and villages changing?

• Building a mine can enforce people to move away: How much relocation is needed? How vulnerable are these people? What kind of compensation can they get?

4. How does mining affect the local economy and general welfare?

A consideration of how the proposed mine may affect the local economy includes the following:

• How much revenue in taxes, royalties and other income will mining bring to the local municipality or region?

• What economic benefits will the local communities get? Direct and indirect?

• How do the benefits divide between various socio-economic, age or other groups and gender?

- Do the mining activities hinder or restrict the development of some other livelihoods or companies in the area?

5. How do environmental changes affect the community and its people?

A consideration of how the environmental consequences of the proposed mine may affect the local people includes the following:

- Mining often causes dust, odours, water and air pollution, heavy traffic and other environmental impacts and risks: Who are the affected people, communities and livelihoods? What are the effects to their lives, living environments and businesses? What are the impacts for recreation, leisure and tourism? What are the environmental and health risks?

- Mine operations can change the land use patterns and ownership: What are these impacts? Are these changes imbalanced or unjust somehow? How does land-use planning adapt to mining? How do the changes in land-use values affect different people?

- Mine operations can change the traditional lifestyle of local communities: What are these impacts? Are they significant, irreversible and how they can be balanced and mitigated? How does the proposed mining project affect local values?

6. How does the project affect community institutions?

- How would the mining development change the local governance and administration? Are there needs for additional resources in the environmental, health care, social or education sectors?

- How could community people and villages influence the mining development?

- What is the role of so-called weak groups, such as elderly people, women, young people and children?

7. How do the local people and communities response to the mining development?

- What are the attitudes and values of the local community towards the mining development?

- What are the issues that people are most worried about? What are community members' aspirations for their future and their children's future?

- The proposed project may alter the relationships among businesses and residents and may lead to conflicts between long-term community members and newcomers.

- Is mining affecting local contradictions — or even conflicts — between different interest groups or values: Who are the main stakeholders? Is there active resistance against the mining proposal? What are the reasons for conflicts?

- What are the capacities of communities for adapting to the mining development? How could the problems be managed? How could these capacities be improved?

8. How does the project affect the local and regional infrastructure requirements?

A mine development project is likely to have many serious consequences related to infrastructure both in the immediate area and in the larger region. This part of the SIA should:

- Assess the transport implications
  - Road improvement
  - Rail improvements
  - New construction

- Consider the energy, water and wastewater capacity required by the project

- Assess the potential impacts on municipal services
  - Police and fire
  - Sanitation
  - Other

Further Reading: Social Impact Assessment

Australian Government, 2012: ***Social responsibility in the mining and metals sector in developing countries***. Canberra, Australian Government. Available from http://www.ret.gov.au/resources/Documents/LPSDP/DEPRES.pdf. — This handbook draws on Australian experience to develop policy guidance and detailed advice according to the social context, the scale of investment and the stage of the development. The target audience includes mining companies, developing country governments, NGOs and communities.

AngloAmerican: ***Socio-Economic Assessment Toolbox***. Available from http://www.angloamerican.com/~/media/Files/A/Anglo-American-Plc/docs/updated_SEAT_v3_Toolbox.pdf. — This toolkit takes a step-by-step approach to socioeconomic assessment, and provides tools for social performance management and the delivery of socioeconomic benefits. It also includes steps on developing social management plans and on reporting.

Franks, D., 2012: ***Social Impact Assessment of Resource Projects***. International Mining for Development Centre Mining for Development: Guide to Australian Practice. Available from http://im4dc.org/wp-content/uploads/2012/01/UWA_1698_Paper-02_Social-impact-assessment-of-resource-projects1.pdf. — This publication discusses the advantages for business and government of an effective policy regime for assessing and managing social impacts. It describes the social impacts of resource development, and defines the social impact assessment process.

Franks, D., C. Fidler, D. Brereton, F. Vanclay and P. Clark, 2009: ***Leading practice strategies for addressing the social impacts of resource developments***. Brisbane, Centre for Social Responsibility in Mining, Sustainable Minerals Institute, The University of Queensland. Briefing paper for the Department of Employment, Economic Development and Innovation, Queensland Government. Available from http://www.csrm.uq.edu.au/docs/Franks_etal_LeadingPracticeSocialImpacts_2009.pdf. — This survey of leading practices notes that cumulative impacts are what environments, communities and economies actually experience, and that the assessment and management of these impacts requires greater collaboration and coordination among stakeholders.

International Association for Impact Assessment, 2003: ***Social Impact Assessment: International Principles***. Special Publications Series No. 2. Available from: http://www.iaia.org/publicdocuments/Pubs_Ref_Material/sp2.pdf. — The IAIA Website describes this set of principles as a living document that will continue to be modified. The result of numerous contributions, these principles lay the foundation for impact assessment.

Minerals Council of Australia, Socioeconomic Benefits and Impacts. ***An Assessment and Planning Toolkit***. Minerals Council of Australia. Available from http://www.minerals.org.au/file_upload/files/resources/SEIBA-Toolkit-draft23August.pdf. — This toolkit assist mining staff at the operational level to undertake a comprehensive assessment process The toolkit is designed as a step by step guide to undertaking a community-centred socioeconomic benefit and impact assessment, and to provide the necessary tools to ensure that the assessment outcomes are linked to the operations strategic and business plans.

Vanclay, F. and A.M. Esteves, eds., 2011: ***New Directions in Social Impact Assessment. Conceptual and Methodological Advances***. Cheltenham, Edward Edgar. — This compilation of papers from leading SIA experts stresses that SIA needs to be more than the prediction of impacts, and that SIA should encompass the management of the social aspects of development in an integrated approach to impact assessment.

Environmental Impact Assessment

The International Association for Impact Assessment (IAIA, 1999) defines "environmental impact assessment" as "The process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made." The IAIA recommends that the EIA process include the following steps: screening; scoping; the examination of alternatives; impact analysis; mitigation and impact management; the preparation and review of an environmental impact statement; decision-making; and follow-up. The IAIA further recommends (IAIA, 1999) that the EIA process be applied:

• As early as possible in decision-making and throughout the life cycle of the proposed project

• To all development proposals that may cause potentially significant effects

• To biophysical impacts and relevant socio-economic factors, including health, culture, gender lifestyle, age and cumulative effects consistent with the concept and principles of sustainable development

• To provide for the involvement and input of communities and industries affected by a proposal, as well as the interested public

• In accordance with internationally agreed measures and activities

The rich literature on environmental impact assessment includes numerous guides, and rather than recapitulate that work, the toolkit advises users to rely on reputable published studies. The national and local authorities are likely to specify the requirements for EIA in their mining development regulations, and the mining company should follow those regulations in conjunction with industry standards.

THE ENVIRONMENTAL IMPACT ASSESSMENT QUESTIONS

1. What are relevant characteristics of the environment and its constituent parts in the area affected by the mine?

2. What are the location, type and scope, as well as the need for land by the mining project?

3. What are the considerable adverse environmental effects that are to be expected?

• Describe impacts on the following assets:
    - People, animals and plants
    - Earth, water, air, climate and landscape
    - Cultural assets and other material assets

• Describe the interaction between impacts on the above-mentioned legally protected assets

4. By what measures can the mine's environmental impact can be avoided, reduced or, if possible, offset?

5. What are the alternative solutions and what are the main reasons for making the choice in regard to the environmental effects of the project?

After completing the required documentation, the competent authority should involve other authorities whose area of environmental competency is affected by the scheme. Once information is ready, the competent authority should also consult the general public regarding the environmental effects of the scheme.

6. What effect does the project have on local and downstream ecosystems services?

The identification and valuation of ecosystem services is an essential component of EIA, and companies may need to compensate both local and downstream communities for losses related to these services (see Compensation section under Management Plan). This analysis may be complicated and controversial, but the payment for ecosystem services idea has gained traction in many areas, and companies may benefit by being out in front of the issue.

Greenhouse gas emissions are a specific kind of "downstream" damage. In this case the downstream community is potentially the entire globe, and the ecosystem services include protection from global warming and the provision of clean air. There is no legal requirement to compile emissions inventories, and only a few mining companies are doing so on a voluntary basis. As the awareness of greenhouse gas emissions has increased, however, more and more individuals, companies and political subdivisions have elected to mitigate their emissions by contributing to offset programmes that act to absorb carbon from the atmosphere. Mining companies seeking to follow this good example of environmental citizenship can compensate for their emissions by contributing to forestry projects or to renewable energy programmes where they are mining.

Further Reading: Environmental Impact Assessment

Canter, L. and B. Sadler, 1997: *A Tool kit for effective EIA practice — Review of methods and perspectives on their application. International Association for Impact Assessment*. Available from http://www.iaia.org/publicdocuments/EIA/SRPEASEIS01.pdf. — This tool kit is meant to assist EIA practitioners in planning and implementing impact studies. A total of 22 types of methods are described for project-level studies; their application, along with several other policy-related methods, are also addressed with reference to cumulative impact assessment and strategic environmental assessment. The most-used types of methods tend to be simpler ones, including analogs, checklists, expert opinion (professional judgment), mass balance calculations and matrices.

Carroll, B. and T. Turpin, 2009: *Environmental impact assessment handbook, second edition*. London, Thomas Telford Publishing. — This handbook offers practical guidance to the requirements of EIA in accordance with United Kingdom regulations. It explains the EIA process and legal procedures, and covers each of the steps and associated studies needed to undertake an EIA and to produce a successful environmental statement.

European Commission, 2001*a*: *Guidance on EIA: Screening*. Edinburgh, Environmental Resources Management. Available from http://ec.europa.eu/environment/eia/eia-guidelines/g-screening-full-text.pdf.

_____, 2001*b*: *Guidance on EIA*: Scoping. Edinburgh, Environmental Resources Management. Available from http://ec.europa.eu/environment/eia/eia-guidelines/g-scoping-full-text.pdf.

_____, 2001*c*: *Guidance on EIA*: EIS review. Edinburgh, Environmental Resources Management. Available from http://ec.europa.eu/environment/eia/eia-guidelines/g-review-full-text.pdf. — The aim of these guidance documents is to provide practical help to those involved in these three stages of the EIA process, drawing upon experience from around Europe and worldwide. The screening and scoping guidance hopes to start the EIA process off on a better footing by encouraging better decisions on the need for EIA and on the terms of reference for the required studies. The EIS review guidance aims to help developers and their consultants prepare better environmental impact statements and competent authorities and other interested parties to review them more effectively.

Environmental Protection Agency, 2002: *Guidelines on the information to be contained in Environmental Impact Statements*. Wexford, Ireland, Environmental Protection Agency. Available from http://www.epa.ie/downloads/advice/ea/guidelines/EPA_Guidelines_EIS_2002.pdf. — This guide from the Environmental Protection Agency of Ireland lays out the basics of screening, scoping and consultation, and discusses EIA principles and issues. It offers guidelines for the various EIA stages, and describes the components of an environmental impact statement in detail.

Federal-Provincial-Territorial Committee on Climate Change and Environmental Assessment, 2003: **_Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners_**. Available from http://www.ceaa-acee.gc.ca/A41F45C5-1A79-44FA-9091-D251EEE18322/Incorporating_Climate_Change_Considerations_in_Environmental_Assessment.pdf. — This document provides environmental assessment practitioners with general guidance for incorporating climate change considerations into the assessment process, and includes methods that can be used to obtain and evaluate information concerning a project's greenhouse gas emissions and the impacts of climate change on a project. It further provides sources of information regarding climate change in EIA and a methodology to encourage the consistent consideration of climate change in EIAs across Canadian jurisdictions and institutions.

Food and Agriculture Organization of the United Nations, 2011: **_Environmental impact assessment: Guidelines for FAO field projects_**. Rome, Food and Agriculture Organization of the United Nations. Available from http://www.fao.org/docrep/014/am862e/am862e00.pdf. — This publication provides guidelines for all FAO units that undertake environmental impact assessments of field projects. While the guidance is specfic to FAO operations, the information is more broadly useful.

Glasson, J., R. Therivel and A. Chadwick, 2011: **_Introduction to Environmental Impact Assessment, 4th Edition_**. Oxford, Routledge. — This textbook provides an overview of EIA, and covers EIA legislation, guidance and good practice with a focus on the United Kingdom and the European Union, but with broad applicability.

International Finance Corporation and World Bank Group, 2007: **_Environmental, Health and Safety Guidelines for Mining_**. International Finance Corporation and World Bank Group. Available from http://www1.ifc.org/wps/wcm/connect/1f4dc28048855af4879cd76a6515bb18/Final%2B-%2BMining.pdf?MOD=AJPERES&id=1323153264157. — These mining guidelines apply to underground and open-pit mining, alluvial mining, solution mining and marine dredging. The document is organized by industry-specific impacts and management, and performance indicators and monitoring, and includes references and additional sources.

Petts, J., ed., 1999: **_Handbook of Environmental Impact Assessment Vol 1 & 2_**. Oxford, Blackwell. — Volume 1 addresses EIA principles, process and methods. It maps the EIA process and its impact on decisions, and positions EIA in the context of sustainable development as well as other decision tools, including economic valuation. The handbook discusses the EIA process and significant topics in terms of good practice and methodology, and considers cumulative impact assessment and strategic environmental assessment methods. Volume 2 considers EIA implementation and practice in Europe, Africa, the Far East, South America and North America.

United Nations Environment Programme, 2002: **_Environmental Impact Assessment Training Resource Manual, Second edition_**, B. Sadler and M. McCabe, eds. Geneva,

United Nations Environment Programme. Available from http://www.unep.ch/etb/publications/EIAMan2editionToc.php. — This manual is a tool for trainers who have some background experience and understanding of EIA, and is designed to assist them in preparing and delivering training courses. Specifically, the manual is designed to assist trainers to identify local EIA needs and priorities and to design training courses to meet these needs.

Websites: Environmental Impact Assessment

International Finance Corporation, World Bank Group. IFC Sustainability — Site Map. Available from http://www1.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/IFC%20Sustainability/SiteMap#key_resources. — This site provides access to numerous resources related to sustainability — environmental, health and safety guidelines, a resettlement planning guide and an introduction to health impact assessment, among others. The environmental, health and safety guidelines are designed to be used together with the relevant industry sector guidelines.

Government of Western Australia, Environmental Protection Authority. Environmental Assessment Guidelines. Available from http://www.epa.wa.gov.au/Policies_guidelines/EAGs/Pages/default.aspx. — These environmental assessment guidelines are intended to inform proponents and the public about the procedures and minimum requirements in an environmental impact assessment. The series includes a number of specific guidelines including those for preparing mine closure plans.

United States Environmental Protection Agency. Environmental Impact Assessment (EIA) Technical Review Guidelines. Available from http://www.epa.gov/international/regions/lac/eiaguidelines.html. — These guidelines cover the energy, mining and tourism sectors; track internationally recognized elements of environmental impact assessment; and provided detailed information by sector on standards, predictive tools and international codes.

MAPPING

This toolkit proposes a systematic approach to making and using maps of various types — scientific, communication and participatory — to advance the mine development process. To one degree or another, all of the maps are intended to be analytical, to communicate relevant information and to serve as a basis for policy making. While the mapping exercises are straightforward and accessible to non-professionals, users of the toolkit with no prior experience in participatory or communication mapping may want to engage the services of qualified individuals or organizations to facilitate these steps. Similarly, scientific mapping calls for the skills of professional cartographers.

The inherent challenge in developing and applying a map-making methodology is finding the proper balance between the various poles — formal versus informal, science versus communication and pictures versus words. A formal strategy may become mired in the administrative concerns of governments and international organizations, while an informal one may be dismissed as lightweight and inconsequential. The scientific approach tends to be overcautious and incapable of communicating its results to decision-makers and the general public, while the communication approach values synthesis over solid science at the risk of being unconvincing and downright biased. Increasingly, segments of the target audience respond better to visual presentations, but good text remains the key to effective communication.

This section of the toolkit describes the three types of maps and the relationships among them. Maps are a powerful form of visual communication, and the strength of the map-making approach proposed here is that the visual elements are based on sound data and are developed in consultation with stakeholders. Applying the toolkit mapping methodology consistently in a region requires a long-term strategy that considers the cost implications. Consultations, maps, graphics and text all come at a price.

Participatory Mapping

The most important maps — those used as the foundation for everything that follows — are the maps resulting from the participatory mapping process. Participatory mapping empowers stakeholders, captures their ideas in an easily understandable visual format, and paves the way to better decisions. The process itself contributes to the avoidance or reduction of conflict, and helps build consensus for a development plan.

Participatory mapping attempts to identify and reveal the relationships between the environment and the local community by applying simple cartography techniques. The maps produced by stakeholders derive not from

scientific investigation but from the ideas and knowledge of the participants. The process typically begins with "naked" maps that show nothing more than coastlines, borders, main rivers and cities. The participants add whatever elements they want based on their own empirical knowledge, values and perceptions.

Considering that mining projects are often concentrated in one locality, and the scale is therefore much smaller than for a country or a province, participatory mapping may achieve more efficient data visualization and participatory inputs through the use of three-dimensional (3D) models that show proposed or existing mine infrastructure, access points, settlements, key natural resources and other features. These models are often produced and made available by mining companies for spatial planning and project presentations. Other 3D applications include Internet-based digital terrain models such as Google Earth and similar mapping tools that allow quick and cost-efficient ways to display a range of data and local inputs. Some of these tools even "animate" mining processes and anticipated environmental effects.

The needs of stakeholders inform the development of the maps, which may present physical resources and geographic features, but can also depict social, cultural, demographic and historical information as well as hazards, land use and traditional knowledge. With regard to natural resources, participatory maps may specify where forest products, medicinal plants, fuel and building materials are collected, and the locations of grazing lands, water sources and hunting and fishing grounds. Participation helps stakeholders learn about each other's concerns and about issues beyond their specific interests.

TECHNIQUES AND APPROACH

1. Start with a naked map or an official topographical map.

Ready-made maps may stifle creativity, inhibit participation or divert attention to irrelevant details such as the spelling of a name or the colour of a symbol. By starting with a blank sheet of paper or an outline of the area of interest or an official topographic map or 3D model, the participants are free to move directly to the expression of their knowledge, ideas and concerns. Ask the participants to:

- Show proposed or existing mining infrastructure

- Show the area's natural resources
    - Water sources
    - Forests
    - Grazing land

- Identify locations of local significance
    - Cultural
    - Historical
    - Social

- Add any information they consider relevant

2. Consolidate, integrate and fact-check the hand-drawn (or computer-based) maps.

The immediate processing and integrating of the information collected in the participatory mapping session is an important step in moving the exercise forward. At this point, cartographers should consult existing scientific maps and other sources on hand, and:

- Consolidate the individual hand-drawn maps and other inputs into one map that integrates all of the information

- Verify the information on the resulting map

- Take the consolidated map back to the participants for their review

3. Conduct a second round of participatory mapping.

A second round of the mapping exercise moves the process towards consensus on a map that expresses the participants' knowledge and concerns. When they see "their" ideas depicted in the evolving map, the participants are reassured that their contributions count. This step should:

- Identify potential disagreements among the participants

- Communicate the information developed to this stage

4. Repeat steps 2 and 3 as necessary.

Reaching wide agreement or consensus on the final map may take several iterations of the process.

Participatory mapping can not only be used for the identification of concerns and for finding the appropriate balances, but also for joint planning of social investments and community development projects proposed for the mining company's consideration, that is, to identify concrete locations and beneficiaries and to rank priorities.

Further Reading: Participatory Mapping

Di Gessa, S. with P. Poole and T. Bending, 2008: ***Participatory mapping as a tool for empowerment: Experiences and lessons learned from the ILC network.*** Rome, International Land Coalition. — The mission of the International Land Coalition is "to promote secure and equitable access to and control over land for poor women and men through advocacy, dialogue and capacity-building." This publication discusses various mapping approaches, and provides case studies to demonstrate the applications of participatory mapping.

International Fund for Agricultural Development, 2009: ***Good practices in participatory mapping***. Rome, International Fund for Agricultural Development. Available from http://www.ifad.org/pub/thematic/index.htm. — Relying on its extensive experience in participatory mapping, the International Fund for Agricultural Development (IFAD) has produced an authoritative manual that covers practices and processes as well as mapping tools.

_____, 2010: ***The IFAD adaptive approach to participatory mapping: Design and delivery of participatory mapping projects***. Rome, International Fund for Agricultural Development. Available from http://www.ifad.org/pub/thematic/index.htm. — This IFAD publication follows up on the previous manual by examining participatory mapping principles, and by elaborating on the mapping process.

_____, 2010: ***Participatory mapping and communication: A guide to developing a participatory communication strategy to support participatory mapping***. Rome, International Fund for Agricultural Development. Available from http://www.ifad.org/pub/thematic/index.htm. — In this brief guide, IFAD demonstrates the importance of a participatory communication strategy to support the dissemination of information collected in the mapping process.

International Fund for Agricultural Development, 2011: ***Evaluating the impact of participatory mapping activities: Participatory monitoring and evaluation***. Rome, International Fund for Agricultural Development. Available from http://www.ifad.org/pub/thematic/index.htm. — The last in the IFAD series on participatory mapping, this guide shows how participatory monitoring and evaluation are integral to the development process, and can "help determine the perceptions of primary stakeholders regarding the relevance of the outcomes of the participatory mapping initiatives on their lives, organizations and capabilities."

National Oceanic and Atmospheric Administration Coastal Services Center, year: ***Stakeholder engagement strategies for participatory mapping***. Charleston, SC, National Oceanic and Atmospheric Administration Coastal Services Center. Available from http://www.csc.noaa.gov/cms/human_dimensions/. — This introductory guide offers advice on how and when participatory mapping may be used, and discusses mapping strategies. It includes a helpful section on validating and analysing the information collected in a participatory mapping exercise.

Scientific Mapping

Governments, project design firms and universities use geographic information systems (GIS) to produce highly technical, scientific maps based on the layering of various factors with a common geographical denominator. This layering can be interesting, but attempts to map the objective truth and model potential risks can sacrifice thinking for the sake of analytical prowess, and can lose the narrative thread. The visual results are often poor, and the maps can be overloaded with information to the point that they are unreadable. This approach to map-making relies on expensive technology and an underlying geospatial data infrastructure, and where these prerequisites do not already exist, the results may not justify the costs.

The advantage of scientific maps is that while they may be inaccessible to lay users, they can advance the analysis. The process itself is analytical, and the interpretation of the results can reveal relationships among the variables. In this regard, the products of scientific mapping are most useful to the map-makers and the other analysts who are trying to come to terms with the full dimensions of the issue at hand. Since the analytical findings of scientific mapping are not self-evident to a general audience, analysts need to tailor the presentation of their results to their intended audience.

TECHNIQUES AND APPROACH

1. Conduct thorough research on what is already available.

Far too often, mapping starts from scratch. In many cases, however, a wide range of official sources and grey literature — material such as company records, market research and conference proceedings not controlled by commercial publishers — is accessible. Much of the grey literature never sees the light of day. Scientific mapping should include:

- A review of the official sources of information relevant to the project

- A search of the grey literature

2. Focus on the specific questions and situations to be mapped.

Designing a multipurpose geographic information system and mapping solution with various layers of information is a tempting approach, but one that often leads to the generation of data and maps that are not used. Scientific mapping should:

• Specify the questions to be answered

• Identify the situations to be mapped

• Design a mapping strategy to hit these targets

• Consider displaying the results of environmental and health risk modelling on a map

3. Consider the big picture when designing a mapping plan.

Building and maintaining a GIS and database can be expensive and time-consuming. From a business perspective, the benefits of the system should justify the expenditure of resources within the timeframe of the system's usefulness. Unfortunately, the world is full of half-finished databases that have never been used.

As experience show, while official mining concession (licence) areas are always precisely defined geographically, often other types of land uses — such as nature protection areas and grazing lands — are less precisely defined. If a mining site is in proximity to a nature reserve, the situation may result in a land use conflict. Precise and science-based geographic documentation of environmental legacies from the past mining operations at a site, background levels for natural radiation or environmental changes occurring in the area due to global or regional factors — such as the melting of glaciers and changes in vegetation and water streams due to climate change impacts or irrigation projects — could help distinguish these impacts from the current mining industry impacts if questions or disputes arise. A consideration of the bigger picture through scientific (precise) mapping is therefore an essential tool for preventing or at least anticipating some challenges and resulting tensions.

4. Think about and contribute to the commons.

There are many ways to upload content to the common geospatial data infrastructure. Governments at all levels are usually driving this, but there are also more open platforms, such as wiki and Google Earth maps.

Communication Mapping

A common mistake that geo-exploration and mining companies have made is to try to use their sophisticated scientific maps (for example, on geology, engineering or environmental modeling) to communicate with stakeholders. While cartographers and engineers may easily grasp the meaning of these maps, laypersons may find them too complicated and difficult to understand. When the stakeholders did not participate in the development of the maps, and when the companies fail to disclose their sources, the stakeholders may not trust the results.

In some ways, the approach to communication mapping is the reverse of scientific mapping — the analysis precedes the map-making, and the point of the exercise is to produce easily understood maps that can be read quickly. Communication maps portray hot issues and priorities through generalization and through supplementary text and graphics, and can accommodate originality and concepts — such as security — that are usually too vague to map.

Communication maps synthesize information. The resulting simplicity that characterizes communication maps is a two-edged sword. It makes communication easy, but it limits the amount and complexity of the information that can be included. In addition, users may perceive the maps as biased rather than objective.

TECHNIQUES AND APPROACH

1. Take the perspective of the target audience, and develop a clear message.
Communication maps start with a message, and until the map-makers know the message they want to convey, they cannot prepare an effective map. Fortunately, the analysis occurs before the making of the communication map, and the message is likely to arise from this work. The task of the communication map-maker is to take the message from the complicated scientific maps and the possibly inaccurate and contradictory participatory maps and present it to the target audience in terms the audience can understand.

2. Organize all the background data and sources on which to develop the map.
The completion of a communication map may entail several iterations, and the ultimate map may be based in part on scientific maps. The idea behind a communication map is to select and use the information necessary to convey the message. The map-makers must be able to justify their choices about what to include and exclude, and must be careful to focus on the message and avoid the pitfall of letting the GIS or data drive the map-making process.

3. Use communication maps to identify ambiguities or contradictions.
The results of participatory mapping exercises may be unclear, and some participatory maps may contradict others. The second round of participatory mapping calls for the identification of disagreements and the communication of the information developed to that point, in other words, the preparation of a communication map.

4. Sketch.
Thinking and working with a pencil before moving on to the computer will allow for much more creativity and freedom.

5. Generalize and simplify as much as possible.
The point of the map is that it communicate its message to the stakeholders. A complicated map is likely to fail to meet this objective.

CONFLICT MEDIATION

The situational analysis, stakeholder identification and the integrated impact assessment are all essential elements of the overall mining conflict prevention strategy. When conflicts nevertheless arise, the appropriate tool is conflict mediation. The stakeholder identification and analysis step contributes significantly to the conflict mediation tool, which in turn contributes to resolving issues in the assessment and in the management plan. Mapping, particularly participatory mapping, helps to prevent conflicts and to resolve them when they arise. In all cases early and effective stakeholder engagement is a key to conflict prevention or minimization.

In the narrowest sense, successful conflict mediation may include nothing more than reaching an agreement, but Susskind and Ozawa suggest a broader definition that considers fairness, efficiency and the stability of that agreement, and identify additional standards by which to judge success (Susskind and Ozawa, 1983):

- An agreement should be readily acceptable to the parties, and be fair to the community

- The results should maximize joint gains (as judged by a disinterested observer) and take precedents into consideration

- An agreement should be reached with a minimal expenditure of time and money

- The process should improve rather than aggravate the relationships between or among the disputing parties

The toolkit bases its advice on conflict management in part on field experience and in part on the rich literature. The further reading section includes several sources that may be useful reference material for companies doing business in areas with the potential for conflict.

Facilitators and Mediators

The Food and Agriculture Organization of the United Nations (FAO) publication, *Negotiation and mediation techniques for natural resource management*, distinguishes between facilitators and mediators: a facilitator is anyone who guides a group process, and a mediator specializes in conflict management processes. In the context of the toolkit, a facilitator is someone who guides the mine development process with the goal of preventing conflict, and may be helpful as concerns begin to emerge.

Local NGOs or individuals who have credibility with all the participants may successfully pioneer the role of facilitator, and help the parties resolve their differences. Typically, such groups or individuals would hold no extreme views, and would generally support development in their region. Where such groups or individuals are available, they would be the

preferred starting point for guiding the process and negotiations.

International organizations that are active in the region and that have a relevant mandate may be able to facilitate the process. The Organization for Security and Co-operation in Europe, for example, has environmental, economic and security mandates, all of which have a bearing on mine development. The United Nations and its affiliates and special agencies may also fill the role. The World Bank, the United Nations Environment Programme and the United Nations Conference on Trade and Development are likely candidates.

An impartial or neutral third party is another possible facilitator. A country or a group with an interest in the region or in development or in mining may bring the credibility and expertise necessary to enable the participants to reach an agreement. Business consultants or representatives of government agencies might also serve as facilitators, but consultants may be perceived as biased and government employees may be constrained by the government's role as regulator. Still, the participants may agree that such facilitators are acceptable in certain cases.

According to the FAO guide, mediators can be either insiders or outsiders, and the selection of the mediator should take the culture where the mediation occurs into account. In cultures with non-direct dealing — where avoidance of conflict and saving face are important values — a local mediator is a likely choice. In these cases, trust is the most important factor, and the parties must trust that the mediator will work to find resolutions in the interests of all the parties without regard for past associations. In direct dealing cultures, where conflict is considered normal and face-to-face interactions are valued, an outside mediator is the more likely option. Impartiality is the key characteristic of the mediator in these cases.

Environment and Security Assessment

This section of the toolkit is intended for a selected subset of toolkit users — those who are policy-makers, security specialists or professionals in ministries of foreign affairs and international organizations — and focuses on an analytical synthesis not for a particular mining development, but for a province, a country or an entire region. Recent experience in Kyrgyzstan and in other world regions shows that mining development projects are capable of generating local tensions that have nationwide effects.

Weak governance and socially and environmentally irresponsible practices of natural resource extraction and utilization, particularly in the mining sector, often result in environmental scarcity, pollution and unequal benefit sharing — any or all of which could contribute to conflict and instability. An abundance of poorly managed natural resources may lead to similar consequences.

Conversely, balanced environment and security conditions are generally associated with good governance and the effective management of natural resources. The approach to environment and security assessments is similar to the toolkit's integrated impact assessment, but it relies on aggregated information and works at a much larger scale. Such assessments are strategic rather than tactical, and take a balanced view of the trends, conditions and issues in a region or a country. The frame of reference has to account for geopolitical factors and types of mineral resources: the approaches for oil and gas could be very different from diamonds or gold. The analysis has to take into consideration the influence of international markets and a region's or a country's dependence on mining, and to consider the effects of how mining companies behave. An environment and

security assessment requires political and governmental engagement, and may entail communications with neighbouring countries. Like the toolkit assessment of a specific proposed mining project, the broader environment and security assessment is interested in environmental, social and economic outcomes, and in how those outcomes relate to the management of natural resources.

The ENVSEC Initiative, a partnership of six international organizations,[1] conducts environmental security assessments for specific sites, for countries and for regions. The ENVSEC mission is to reduce environment and security risks from environmental mismanagement or pollution by strengthening cooperation.

TECHNIQUES AND APPROACH

1. Start with a mapping exercise that consolidates expert knowledge of the region or country.

An environment and security assessment benefits from the use of participatory, scientific and communication maps, but in this type of analysis the participants are environment and security professionals and stakeholders with country and expert knowledge. As with the stakeholder identification and analysis, the selection of experts is crucial to the success of the exercise. The point of the exercise is to describe the prevailing conditions and to identify any hot spots. In the context of environment and security, a hot spot may be the result of a weakness that fuels a bad situation — anything from the prevalence of corruption to long-lasting mining protests and abandoned mine sites to a lack of knowledge and information.

This description of the situation serves as the basis for the comparison of alternative scenarios.

2. Develop two scenarios based on the professional judgement of the participants, and project the expected results of taking no action compared to taking affirmative steps.

The overall objective is for the participants to develop an understanding of the gravity of the situation. The comparison of scenarios starts with an analysis of the current conditions and trends, and continues with projections of how the situation may affect the various players and security. These projections depend in large part on the participants' ability to determine the reasons for the hot spots, which are themselves indicative of weaknesses. An explanation for strong local resistance to mining, for example, may be key to understanding a particular situation. With a clear understanding of the situation, the participants will be well prepared to estimate the measures and resources necessary to resolve any environmental security issues.

3. Formulate and take the steps necessary to respond to the hot spots.

Among the measures typically employed to improve environmental security are capacity-building and the development of trust among the parties. At the government level, the interventions include new legislation and improvements in policy. And at the mine level, risk reduction strategies are important contributors to improved security. The preceding analysis should inform the identification and selection of appropriate measures, the assignment of responsibilities to the relevant players and the determination of the resources necessary to accomplish the tasks.

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1. The Organization for Security and Cooperation in Europe; the Regional Environment Centre for Central and Eastern Europe; the United Nations Development Programme; the United Nations Economic Commission for Europe; the United Nations Environment Programme; and the North Atlantic Treaty Organization as an associated partner.

Websites: Environment and Security and Peacebuilding

Environment and Security Initiative.
Available from http://www.envsec.org/index.php?lang=en.

Foundation for Environmental Security and Sustainability.
Available from http://www.fess-global.org/ESAF.cfm.

United Nations Environment Programme (UNEP) Disasters and Conflicts sub-programme.
Available from: http://www.unep.org/disastersandconflicts/Home/tabid/51919/Default.aspx

Further Reading: Conflict and Post-conflict Management

CommDev/Environmental Resources Management, 2008: ***Community development and local conflict: A resource document for practitioners in the extractive sector***. Available from http://commdev.org/content/document/detail/1801/. — This document focuses on the links between local (not national or international) conflict and extractive sector community development. It provides a set of tools to navigate and prevent or mitigate conflict around community development, and offers lessons learned from peer group companies and case studies.

Engel, A. and B. Korf, 2005: ***Negotiation and mediation techniques for natural resource management***. Rome, Food and Agriculture Organization of the United Nations. Available from ftp://ftp.fao.org/docrep/fao/008/a0032e/a0032e00.pdf. — This comprehensive FAO guide offers practical advice on how to conduct negotiations and work towards consensus in conflicts over natural resource management. Its focus on situations where a third party becomes involved makes this guide particularly useful for facilitators and mediators, but its straightforward approach may appeal to all participants.

Gossen, R., Nexen and E. Mendes, 2002: ***A business guide to conflict impact assessment and risk management***. Toronto, University of Ottawa. Available from http://commdev.org/content/document/detail/1433/. — This guide helps companies develop strategies that minimize the negative effects and maximize the positive effects of investing in areas of conflict or potential conflict. It provides guidance at two critical stages — the pre-investment and pre-operational stage, and the operational stage.

International Alert, 2005: ***Conflict-sensitive business practice: Guidance for extractive industries***. London, International Alert. Available from http://www.iisd.org/pdf/2005/security_conflict_sensitive_business.pdf. — This independent peacebuilding organization offers advice targeted more directly to the mining sector for companies doing business in societies at risk of conflict.

International Business Leaders Forum and International Finance Corporation, 2010: ***A guide to human rights impact assessment and management***. International Business Leaders Forum, International Finance Corporation, UN Global Compact. Available from http://www.guidetohriam.org/welcome. — This guide provides advice to companies on how to identify and assess the human rights risks and impacts of their business activities, and how to integrate the results of this assessment into their management systems to improve performance.

International Petroleum Industry Environmental Conservation Association, 2008: ***Operating in areas of conflict: An IPIECA guide for the oil and gas industry***. London, International Petroleum Industry Environmental Conservation Association. Available from http://www.ipieca.org/publication/guide-operating-areas-conflict-oil-and-gas-industry. — This publication provides basic guidance on risk assessment and risk management in conflict settings including conflicts that are directly related to the presence and operations of the companies themselves, as well as wider social and political conflicts in which companies are not directly involved but which are very likely to impact on companies operating in such environments.

Office of the Compliance Advisor/Ombudsman (CAO), 2008: ***A guide to designing and implementing grievance mechanisms for development projects***. Washington, World Bank Group. Available from http://www.cao-ombudsman.org/howwework/advisor/documents/implemgrieveng.pdf. — This guide consolidates knowledge regarding grievance resolution from various sources, including on-the-ground experiences of the CAO, findings from studies on grievance resolution in the workplace and in environmental conflict resolution, and practical experience in establishing peace accords and procedures in post-conflict disputes over land and property.

United Nations Environment Programme, 2009: ***From conflict to peacebuilding: The role of natural resources and the environment***. Nairobi, United Nations Environment Programme. Available from http://postconflict.unep.ch/publications/pcdmb_policy_01.pdf. — This report starts a UNEP policy series on the environmental dimensions of disasters and conflicts. It examines the relationships between conflict and natural resources and the environment, and explores the potential role of natural resources and the environment in peacebuilding.

United Nations Global Compact Office and the Principles for Responsible Investing Initiative, 2010: ***Guidance on responsible business in conflict-affected and high-risk areas: A resource for companies and investors***. New York, United Nations Global Compact Office. Available from http://www.unglobalcompact.org/docs/issues_doc/Peace_and_Business/Guidance_RB.pdf. — This guidance, intended to help companies improve their conduct, is divided into four areas of business practice — core business, government relations, local stakeholder engagement and strategic social investment.

United Nations Interagency Framework Team for Preventive Action, 2010: ***Environmental scarcity and conflict: Guidance note for practitioners***. Available from http://www.unep.org/conflictsanddisasters/Portals/6/ECP/GN_Scarcity_Consultation.pdf. — This guidance discusses the role of natural resources in conflict, identifies the environmental scarcity drivers and presents conflict prevention measures. This version is a working draft that will be updated in accordance with the findings of pilot projects.

United States Agency for International Development, 2005: ***Livelihoods and conflict: A toolkit for intervention***. Washington, United States Agency for International Development. Available from http://www.usaid.gov/our_work/cross-cutting_programs/conflict/publications/docsCMM_Livelihoods_and_Conflict_Dec_2005.pdf. — This toolkit identifies the key issues and methods for understanding the common impact of conflict on livelihoods and the ways to address the most vital needs of those affected by conflict. The toolkit applies livelihoods analysis chiefly in situations of violence or serious conflict involving destruction of homes and displacement of persons.

MANAGEMENT PLAN

Environmental management plans are common in the mining industry. Social management plans, however, have only recently emerged as a process to link impact assessment to ongoing management and proactively respond to social and community issues (Franks et al., 2009). Governments and investors in projects are increasingly requiring them. They are usually developed as an outcome of the preparation of impact statements for project approvals and then periodically updated (Franks, 2012).

Social management plans (also known as social impact management plans, environmental and social management plans, social and labour plans and environmental and social action plans) may be developed in partnership with regulatory agencies, investors and the community; they identify the responsibilities of each party in the management of impacts, opportunities and risks. Management plans also provide an opportunity to link activities with local and regional planning processes and, if developed with reference to the management plans of other operations, can assist to address cumulative impacts. They also provide the facility for the coordination of project activities with government planning for services and infrastructure.

Environmental and social management plans summarize the findings of the impact assessments; outline the measures for mitigation and community development; provide estimates of the timing, frequency, duration and cost of management measures; and establish monitoring and reporting procedures (Franks et al., 2009). They also explicitly refer to capacity-building activities where there is no institutional or community capacity to undertake the activities. Finally, the plans outline the procedures for how social issues will be addressed in site management systems and plans.

Management plans:

- Document the objectives of the management plan based on the impact assessment

- Define the suitable measures for the various objectives

- Quantify or make qualitative targets for the different objectives

- Plan the timing of different actions during the mining operations

- Make the plans for who will be responsible for different actions

Measures may include the following:

- Local social investments

- Planning for closure

- Mitigation for predicted negative impacts

- A monitoring plan for environmental and social impacts

- Stakeholder engagement during the operations

Developing clear objectives for a management plan could be challenging particularly when a significant amount of information has been gathered. A management plan cannot resolve every issue in the community, so prioritizing the benefits and opportunities is important and should be done in consultation with community members and other key stakeholders.

Establishing a community steering group is a useful step in monitoring the implementation of a management plan. This group would usually include:

- Mining company representatives

- Central government representatives

- Local government representatives

- Indigenous people

- Community organizations and community leaders

In determining the priority areas, a management plan could consider the following headings:

- Income-generating activities

- Training and education

- Health

- Infrastructure

- Community development and the provision of information

The plan should provide for regular reviewing of implementation and updating to ensure that:

- The company and the community are doing what they agreed to and are respecting the timeframes

- Activities are within budget

- Achievements are reported, barriers and issues highlighted early and solutions identified

A typical management plan may include numerous elements. The toolkit covers five of the most important: grievance procedures, transparency, social investment, compensation and resettlement.

Grievance Procedures

Having a credible and effective grievance procedure in place is the responsible way for a company to handle specific concerns in the community, and is in the best interests of both the company and the community. When companies develop a predictable process respected by the community, they enhance their reputation with stakeholders and deliver the message that they will respond to complaints on the merits.

The complaint procedure should anticipate the frequency of complaints, provide for a determination of the credibility and seriousness of the complaints and maintain a broad scope. The process should be clear to complainants, and provide for cultural preferences. Where possible, companies should consider involving respected third parties in both the design and execution of the process. Access should be easy, and the company should promote awareness of the grievance procedure among stakeholders.

Transparency and Access to Information

Mining represents a significant foreign direct investment in the developing world. Revenues from mining go to governments in the form of taxes, fees, royalties and local transfers. While these funds could support economic and social development, the central and local governments and other institutions that manage the funds often act with impunity. The absence of transparency and accountability creates an environment ripe for embezzlement, misappropriation and corruption. The inaccessibility of information about the mining company also adds to negative feelings at the local or national level.

The lack of information on environmental and social performance of the extractive industry creates a rich soil for rumours and fuels distrust towards state authorities and companies. In case of industrial or environmental emergencies, the rapid release of reliable information is particularly important.

TECHNIQUES AND APPROACH

1. Make a clear and unequivocal company commitment to transparency.

Company policies on corruption begin with a commitment that all revenue flows to governments will be handled in a transparent manner. The general public should have access to reliable information on environmental and social performance (and, if appropriate, to licences and permits) of businesses in the extractive industry.

2. Cooperate with other mining companies and civil society organizations.

By working together, mining companies can form effective industry lobbies in a way that ensures that no one company is at a competitive disadvantage. A company's participation in the Extractive Industry Transparency Initiative with its standardized reporting format, may add to the company's transparency. At the same time, dialogue with civil society

organizations, such Aarhus Convention public environmental information centres, could help to improve environmental reporting.

3. Highlight the company's commitment to transparency.

The publication of business principles related to transparency and corruption on the company website and in annual reports sends a message to host governments and others.

4. Inform the community about the company.

Companies can increase their transparency by publicizing the basic facts about themselves through company profiles that identify the owners, discuss production and highlight their participation in environmental and social programmes. Companies can make themselves more accessible to local residents by establishing community offices that communicate through posters, press releases, videos and direct contact. Such offices can also serve to establish and maintain open and constructive relations with the local media. Corporate offices can take the same approach with national and international media.

Websites: Transparency and Access to Information

Extractive Industry Transparency Initiative. Available from http://eiti.org/eiti.

United Nations Economic Commission for Europe, Aarhus Convention. Available from http://www.unece.org/env/pp/content ofaarhus.html.

Social Investment

A company's social investments in a community may include the building and repairing of schools, hospitals, roads and electricity lines. Unfortunately, these significant contributions to community development sometimes falter when the mining company no longer provides operational support, and the community memory of this type of mining company's support is fading away with time. Sometimes local communities lack the means to maintain and staff these efforts, and the social investments may create an obligation that the community cannot sustain on its own. Similarly, when mining companies contribute to social development funds that operate without proper oversight the results are often disappointing. The most effective way for mining companies to contribute social investments are through community development agreements that provide for the long term by integrating the necessary implementation steps into the original social investment plan.

TECHNIQUES AND APPROACH

1. Establish local social development funds that are transparently supervised by local authorities and community representatives.

Stakeholder consultations and the social impact assessment can guide the development of a social investment strategy, and the continuing participation of local authorities and community representatives can ensure the effectiveness of the social funds.

2. Consider using microcredits rather than grants to support social development and increase local procurement (where feasible).

Where companies have invested in social development through microcredits, both the

business outcomes and the social development benefits have been more substantial and longer lasting.

3. Cooperate with trusted third parties, such as NGOs or local and international develop-ment agencies, to implement and monitor social development projects.

The participation of third parties in the implementation and monitoring of social development projects lends credibility to the venture.

Further Reading: Social Investment

International Finance Corporation, 2010*a*: Strategic community investment: **A good practice handbook for companies doing business in emerging markets**. Washington: International Finance Corporation. Available from http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_handbook_communityinvestment__wci__1319576907570 — Drawing on the experiences of companies doing business in emerging markets, this handbook offers strategic advice on how to support community investments that are successful and sustainable, and that align with company objectives.

_____, 2010*b*: A quick guide: **Highlights from IFC's good practice handbook**. Available from http://www1.ifc.org/wps/wcm/connect/ace84b8048855511b57cf76a6515bb18/IFC_com_inv_handbook_2.pdf?MOD=AJPERES&CACHEID=ace84b8048855511b57cf76a6515bb18. — This guide is a summary document of the previous entry.

International Finance Corporation and Engineers Against Poverty, 2011: **A guide to getting started in local procurement**. Washington: International Finance Corporation. Available from http://www.engineersagainstpoverty.org/_db/_documents/IFC-EAP_Local_Procurement_Guide.pdf. — This guide helps companies develop strategies for local procurement by identifying the business drivers that make local procurement good business.

International Council on Mining and Metals, World Bank and ESMAP, 2005: **Community development toolkit**. Available from: http://www.icmm.com/page/629/community-development-toolkit. — This toolkit covers stakeholder relationships and the assessment, planning, management and evaluation of community development projects.

World Bank, 2012: **Mining Community Development Agreements Sourcebook**. World Bank. Available from http://siteresources.worldbank.org/INTOGMC/Resources/mining_community.pdf. — This sourcebook considers the development and implementation of the various strategies that may be part of a community development agreement. Such strategies may include social or community investment programmes, community-controlled trusts, and development forums, funds or foundations, and may be led by government, companies, the community or collaborative bilateral or multi-sector partnerships.

Compensation

Compensation for the acquisition of land or other assets is a sensitive subject in mine development. National legislation may govern compensation agreements, but in any case, fair compensation policies will help companies maintain constructive relations with the local community. Companies are well advised to focus on the long-term. Their ongoing community relations are more important to their success than any short-term advantages of lower payments.

TECHNIQUES AND APPROACH

1. Maintain transparency and consistency.
Companies should develop their policies in consultation with stakeholders, and should provide their stakeholders with any analytical materials used to formulate compensation offers. To ensure consistency, companies may want to consider a contractual arrangement that precludes any payments until agreements are reached with all affected parties.

2. Consider measures to assure the effective use of compensation.
The mining companies may be in a good position to offer advice to the recipients of compensation with regard to investment opportunities, and may be helpful in establishing trust funds, releasing microcredits or catalysing local businesses. Companies may also be able to promote economic stability by offering land-for-land compensation. Payments "to buy" local loyalty for the mining project should be carefully considered in advance, since they could lead to undesirable outcomes.

3. Consider payments for ecosystem services.
The concept of payments for ecosystem services is being promoted and increasingly used both at the local level — for regulating pasture grazing pressures — and between industries and communities for watershed and forest protection around hydropower reservoirs, for example. This novel approach to environmental management, and the concepts for valuation of ecosystem services, are still in the early stages of development. Policy-makers and communities may be able to use the valuation of ecosystem services to balance mining income and mineral resource extraction against the exploitation of ecosystems. Mining companies may also contribute to offset programmes as compensation for their greenhouse gas emissions.

Some local community members may not have legal title to the land or other natural resources that they use, but could nevertheless experience loss of income or assets as a result of mining project. Companies should pay attention to the informal users in designing compensation schemes.

4. Consider the opportunity costs for the community.
In Kyrgyzstan and in other countries, compensation for lost productivity is sometimes part of the overall compensation package. This approach takes into account such lost opportunities as pastures that can no longer be used as pastures. In such cases, the compensation considers the opportunity cost of the lost income resulting from the loss of pasture.

Resettlement

Companies should avoid the expense, risks and complexities of resettlement whenever possible, and should explore alternatives through careful site selection, routing studies and the consideration of alternative technical and design options. Whenever resettlement is unavoidable, the company should minimize its effects through creative project design intended to avoid adverse effects on community assets.

TECHNIQUES AND APPROACH

1. Prepare a resettlement plan based on consultations with those persons to be displaced.
The consultations should include informal land users who may not have legal title, but will nevertheless experience a loss of assets or income as a result of the project, and should provide opportunities for all the affected parties to participate in the resettlement planning and implementation.

2. Allow sufficient time for land acquisition and for consultations.
Companies should ensure that any resettlements proceed in accordance with international standards, and that their agreements with the host government specify that land acquisition and resettlement be conducted accordingly. The process may be time-consuming, but the success of the programme depends on its adherence to accepted standards. Information derived from the social impact assessment may be useful in developing the resettlement plan.

Further Reading: Resettlement

Asian Development Bank, 1998: ***Handbook on resettlement: A guide to good practice***. Manila, Asian Development Bank. Available from http://www.adb.org/documents/handbook-resettlement-guide-good-practice. — This handbook describes resettlement in the context of the ADB project cycle, and covers key planning concepts and income restoration strategies, among other topics.

European Bank for Reconstruction and Development, 2012: ***Performance Requirement 5: Land Acquisition, Involuntary Resettlement and Economic Displacement***. Available from http://www.ebrd.com/downloads/about/sustainability/ESP_PR05_Eng.pdf. — This set of performance requirements is one of ten that EBRD maintains for its clients. The performance requirements are designed to ensure compliance with good international practices for sustainable development.

International Finance Corporation, 2002: ***Handbook for Preparing a Resettlement Action Plan***. Washington, International Finance Corporation. Available from http://www1.ifc.org/wps/wcm/connect/22ad720048855b25880cda6a6515bb18/ResettlementHandbook.PDF?MOD=AJPERES. — This handbook provides guidance to IFC clients, government agencies, NGOs and affected persons in the planning and implementation of involuntary resettlement associated with projects that may result in the loss of assets, the impairment of livelihood or the physical relocation of an individual, household or community.

Further Reading: Responsible Mining

International Council on Mining and Metals, 2006: ***Good Practice Guidance for Mining and Biodiversity***. London, International Council on Mining and Metals. Available from http://www.icmm.com/page/1182/good-practice-guidance-for-mining-and-biodiversity. — Mining companies can use this practical reference source on biodiversity at all stages of their operations from exploration to mine closure. By implementing these guidelines, companies will be better able to identify and evaluate biodiversity and to understand its interfaces with their activities, assess the potential for negative impacts, develop and apply mitigation measures for such impacts, and increase their contribution to biodiversity enhancement or conservation.

_____, 2008: ***Planning for integrated mine closure: Toolkit***. London, International Council on Mining and Metals. Available from http://www.google.com/search?client=safari&rls=en&q=Planning+for+integrated+mine+closure:+Toolkit&ie=UTF-8&oe=UTF-8 — This toolkit takes a disciplined approach to integrated closure planning and promotes the adoption of uniform good practices across the sector. The concepts apply equally well to both large and small companies.

Organisation for Economic Co-operation and Development, 2005: ***Environment and the OECD guidelines for multinational enterprises: Corporate tools and approaches***. Paris, Organisation for Economic Co-operation and Development. Available from http://www.oecd.org/document/36/0,3746,en_2649_33713_34992996_1_1_1_1,00.html — This document provides in-depth information and case studies on the tools and approaches available to companies that seek to upgrade their environmental performance by following the recommendations contained in the Environment Chapter of the OECD Guidelines.

Prospectors and Developers Association of Canada, 2003: ***Environmental excellence in exploration (e3)***. Toronto, Prospectors and Developers Association of Canada. Available from http://www.pdac.ca/e3plus/. — The PDAC developed the e3 program in partnership with a consortium of leading mining companies to encourage environmental stewardship and community engagement during the exploration stage of resource development. This online reference of good practices in exploration, along with guidelines for their implementation, was compiled and produced for the global exploration community, its contractors and sub-contractors.

Quintero, J., 2006: ***Best practices in mainstreaming environmental & social safeguards into gas pipeline projects: Learning from the Bolivia-Brazil gas pipeline project (GASBOL)***. Washington, The World Bank Group. Available from http://www.worldbank.org/en/country/brazil/projects/operational-documents?docty_exact=ESMAP+Paper&qterm=&lang_exact=English. — This paper presents the Bolivia-Brazil Pipeline Project as a case study for environmental and social safeguards analysis.

World Economic Forum, 2011: ***Responsible mineral development initiative 2011***. Geneva, World Economic Forum. Available from http://www.weforum.org/reports-results ?fq=report^industry_term%3A%22Mineral%22. — This report identifies the challenges to responsible mining, and takes a building-block approach to constructing a framework for unlocking the potential socio-economic benefits of mineral development.

Websites: Responsible Mining

Australian Government, Department of Resources, Energy and Tourism. Leading Practice Sustainable Development Program handbooks. Available from http://www.ret.gov.au/resources/resources_programs/lpsdpmining/handbooks/Pages/default.aspx.

Equator Principles. Available from http://www.equator-principles.com/index.php/about-ep.

International Network for Acid Prevention. Development of the Global Acid Rock Drainage Guide. Available from http://www.gardguide.com/index.php/Main_Page.

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Esteves, A.M., M-A. Barclay and D. Brereton, 2010: Integrating social and economic impact assessment into local procurement strategy. Available from http://www.csrm.uq.edu.au/LinkClick.aspx?fileticket=d01DipIat9A%3D&tabid=191&mid=685.

Extractive Industries Review, 2003: *Striking a Better Balance.* Available from http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTOGMC/0,,contentMDK:20306686~menuPK:336936~pagePK:148956~piPK:216618~theSitePK:336930,00.html.

Franks, D., 2012: Social Impact Assessment of Resource Projects. International Mining for Development Centre Mining for Development: Guide to Australian Practice. Available from http://im4dc.org/wp-content/uploads/2012/01/UWA_1698_Paper-02_Social-impact-assessment-of-resource-projects1.pdf.

Franks, D., C. Fidler and P. Clark, 2009: Leading practice strategies for addressing the social impacts of resource developments. Brisbane, The University of Queensland and The Queensland Government.

International Alert, 2005: *Conflict-sensitive business practice: Guidance for extractive industries.* London, International Alert. Available from http://www.iisd.org/pdf/2005/security_conflict_sensitive_business.pdf.

International Association for Impact Assessment, 1999: Principles of environmental impact assessment best practice. Available from http://www.iaia.org/publicdocuments/special-publications/Principles%20of%20IA_web.pdf.

International Finance Corporation, 2007: *Stakeholder engagement: A good practice handbook for companies doing business in emerging markets.* Washington, International Finance Corporation. Available from http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_handbook_stakeholderengagement___wci___1319577185063
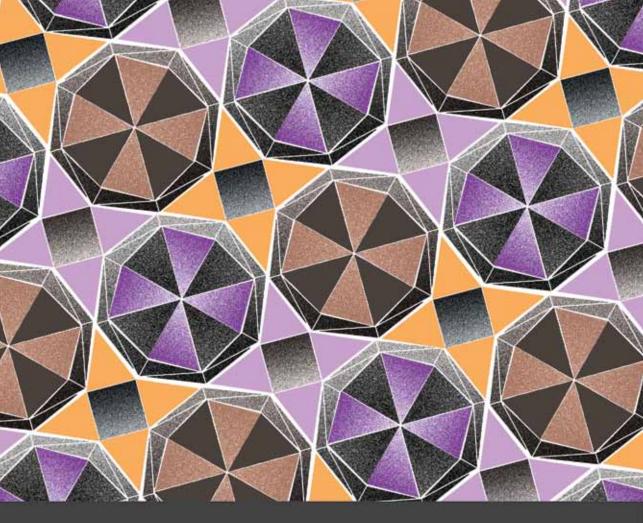
International Petroleum Industry Environmental Conservation Association, 2008: *Operating in areas of conflict: An IPIECA guide for the oil and gas industry*. London, International Petroleum Industry Environmental Conservation Association. Available from http://www.ipieca.org/publication/guide-operating-areas-conflict-oil-and-gas-industry.

Kapelus, P., E. Richards and H. Sherwin, 2011: Conflict-sensitive impact assessment. In: New Directions in Social Impact Assessment. Conceptual and Methodological Advances (F. Vanclay and A. Esteves, eds). Cheltenham, Edward Elgar Publishing.

Lassonde, P., 2003: How to earn your Social Licence, *Mining Review*, Summer, 7—13.

Shepard, R.B., 2008: Gaining a social license to mine, MINING.com. Available from http://magazine.mining.com/issues/0804/GainingSocialLicenseMine.pdf.

Susskind, L., and Ozawa C., 1983: Mediated negotiation in the public sector: mediator accountability and the public interest problem. American Behavioral Scientist, 27(2), 255-79.

The toolkit is designed to help all users — mining companies, national and local governments, NGOs, local community representatives and international bodies — build their capacities to identify tensions and to prevent or mediate conflicts. The application of these tools can reduce the potential for conflict at every stage of the process from feasibility studies to environmental impact assessments all the way through ongoing mining operations — when corporate social responsibility becomes a matter of routine management. The toolkit is practical, easy to use and accessible to a broad range of users including those who have little or no prior experience with assessment or mapping tools.