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Environmental and Social Impact Assessment

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About This Series and MLRI

This *Working Papers Series on International Best Practices* is prepared within the scope of the **Mining Legislation Reform Initiative (MLRI)**, a project of the **AUA Center for Responsible Mining**. MLRI is a multi-year effort, funded by the **Tufenkian Foundation**, to improve Armenia's legislation ensuring that mining in Armenia provides sufficient benefits to the country and local communities. The initiative involves drafting and passing legislation that elevates the socio-economic benefits of mining, while reducing the negative environmental and public health impacts. A key component of the MLRI is collaborating and partnering with civil society, advocacy groups, academic institutions, and relevant national and international organizations. MLRI works with the key governmental and legislative bodies in getting the draft legislation passed into law. For more information visit <http://mlri.crm.aua.am>.

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The American University of Armenia (AUA) Center for Responsible Mining promotes the creation and adoption of global best practices in socially, environmentally, and economically responsible Mining in Armenia and the region. To achieve this, the Center conducts research, training, and advocacy engaging all key stakeholders including industry, civil society, financial institutions, and the public sector. For more info, visit <http://crm.aua.am>.

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Introduction

Mining projects trigger multiple, dynamic and multi-layered impacts (both positive and negative, see Table 1). Examples of positive impacts include road upgrades, access to a greater range of health services, new parks and recreational areas, upgrades to community facilities and greater education and employment opportunities. Potential negative impacts range from increased crime rates to higher cost of living (e.g. services, housing) and respiratory health risks caused by air pollution (e.g. due to truck traffic and dust).

Table 1: Impacts associated with mining projects¹

Positive	Negative
<ul style="list-style-type: none"> • improved infrastructure (e.g. roads) and services (e.g. access to water, sanitation, power) • better health outcomes, due to improved services and delivery, better preventive measures • improved support for education and better resources and facilities • enhanced employment and business opportunities in resources and associated industries • increased income flows through royalty streams and compensation payments • improved living standards due to increased wealth • project proponent support for government socio-economic initiatives (e.g. community development; education and literacy, small business development) • environmental restoration and protection measures 	<ul style="list-style-type: none"> • physical or economic displacement and resettlement • social dislocation and erosion of cultural values as a result of rapid economic and social change • social conflicts over the distribution and value of mineral processing and mining-related benefits (e.g. royalties, jobs) • increased marginalisation of some groups • increased risk to community health and safety caused by social (e.g. alcoholism, drug use, gambling and prostitution) and environmental issues (e.g. high levels of toxicity, air and water pollution, etc.) • large-scale uncontrolled in-migration contributing to demand for resources and services (e.g. housing, health, education) and social tensions • increased risk to, and levels of, communicable diseases, non-communicable diseases, mental health disorders, accidents and injuries

¹ Adapted from International Council on Mining and Metals (ICMM) (2016), [Good practice guide: Indigenous peoples and mining: good practice guide](#) and International Council on Mining and Metals (ICMM) (2010), [Good practice guidance on health impact assessment](#).

Impacts can be tangible (e.g. pollution, loss of biodiversity, improved access to health services, better living standards, shortage of affordable housing options) or intangible (e.g. psychological stress resulting from a belief that the environment is increasingly polluted or that social cohesion in the community is breaking down due to rapid development and in-migration).²

Impacts that stem from mining projects are difficult to predict and manage over time. Impact assessment is a methodology used by governments, companies and communities to identify and assess environmental, social and health impacts of project activities and ensure that management and mitigation strategies minimise adverse impacts and enhance the benefits for project-affected communities and the environment.³

Current situation in Armenia

Environmental and social regulation of Armenia's mining sector is primarily based on the *RA Law on Environmental Impact Assessment and Expert Examination 2014* (EIA Law) and the *RA Mining Code 2012* (Mining Code). The former is sophisticated and includes most modern concepts to anticipate, prevent and mitigate negative impacts on the environment and humans, during the life of the mine and including mine closure. Key principles guiding the preparation of assessments and expert examinations are in line with the concepts of sustainable development.

In addition to defining general EIA principles and procedures, the EIA Law also introduces the concept of strategic assessment and defines activities subject to strategic assessment (such as mining). The EIA Law defines strategic assessment as the process of evaluating the possible cumulative impacts of the proposed project.⁴

The Mining Code requires mining project proponents or operators to undertake measures for: protection of the environment, water basins, soil, fauna and flora; and respecting the regime of special protected national parks. Mining companies are not obliged to carry-out self-monitoring. The Mining Code refers to other law, including the EIA Law, for further regulation.⁵

Social impact assessment (SIA) is part of the requirements of the Mining Code and the EIA Law. The requirements are to include provisions to improve the local population's social conditions, livelihoods and guarantee participation in decision-making regarding socio-

² Burdge, R.J., & Vanclay, F. (1996). [Social impact assessment: a contribution to the state of the art series](#). *Impact Assessment*, 14(1): 59–86.

³ Vanclay, F. (2003). [International principles for social impact assessment](#). *Impact Assessment and Project Appraisal*, 21(1): 5–11.

⁴ The World Bank (2016), [Armenia: Strategic Mineral Sector Sustainability Assessment](#), April.

⁵ Ibid.

economic development initiatives for the affected communities. Legislation stipulates that mining contracts should include provisions related to local socio-economic development. However, these provisions have only been “tested” within the EIA process of Lydian International’s Amulsar gold project.⁶

Health impact assessment (HIA) is also part of the requirements in the existing legislation, which is to be undertaken during the EIA process. However, proponents do not undertake the HIA as there are no implementation guidelines.

There is a general lack of secondary legislation and/or guidelines to aid implementation of the EIA Law, such as guidelines or methodologies for assessing environmental, social and health impacts and for cumulative impact assessment. This is partly due to the fact that the EIA Law was enacted recently.⁷ In the absence of detailed guidelines, mining contracts can play an important role in aligning with best international environmental and social practice.

International best practice

Principles

Most mining jurisdictions have a regulatory regime in place to ensure that the environmental and social impacts are assessed and managed. According to a 2012 survey, some form of EIA is mandated in 191 of the 193 nations of the world.⁸ This includes statutory requirements to undertake SIA and HIA, either as separate procedures, or as part of integrated environmental, social and health impact assessment (ESHIA). In most cases SIA and HIA remain included as components of EIA.

Environmental, social and health impact assessment has the potential to contribute to sustainable development if implemented to the standard recommended in the literature as “best practice”.⁹ This growing body of literature provides detailed guidelines and benchmarks for the management of impacts associated with mining developments.

The International Association for Impact Assessment (IAIA) is the global authority on the leading practice in the use of impact assessment for informed decision-making regarding policies, programmes, plans and projects. The association provides an international forum for advancing innovation and communication of leading practice in impact assessment. For example, the 2015 SIA guidance, entitled [Social Impact Assessment: Guidance for Assessing](#)

⁶ See <http://www.lydianinternational.co.uk/reponsibility/esia> and <http://www.lydianarmenia.am/en/publications.html>.

⁷ The World Bank (2016), [Armenia: Strategic Mineral Sector Sustainability Assessment](#), April.

⁸ Morgan, R.K. (2012). [Environmental impact assessment: the state of the art](#). *Impact Assessment and Project Appraisal*, 30(1): 5–14.

⁹ Esteves, A.M., Franks, D., & Vanclay, F. (2012). [Social impact assessment: the state of the art](#). *Impact Assessment and Project Appraisal*, 30(1): 34–42.

[and Managing the Social Impacts of Projects](#),¹⁰ provides detailed advice on best practice in the undertaking and appraisal of SIAs and the adaptive management of projects to address the social ramifications. The guidance is widely used by practitioners, social performance teams, government regulators, the international finance community, NGOs and affected community representatives to benchmark performance in relation to the management of social issues arising from mining projects.

Elements

Originally conceived as a tool for predicting impacts prior to project development, leading practice includes strategies to minimise adverse impacts and enhance the benefits associated with mining projects. Impact assessment is most effective as an iterative process across the lifecycle of developments, rather than a one-off activity at the outset of project development.¹¹ Specifically, leading practice involves the application of management systems and strategies to monitor, report, evaluate, review and proactively respond to change throughout the life of the project which, in the case of mining, extends to closure.¹²

The alignment of activities with regional and/or community planning objectives, consideration of cumulative impacts of multiple projects and meaningful community participation in decision-making are key elements of best practice. Stakeholder participation in decision-making during the impact assessment process is crucial for improving the quality of the assessments and, ultimately, achieving social acceptance. The impact assessment process brings most benefits to project-affected peoples when it is supported by a predictive and participatory community engagement approach (see Box 1 for definitions and key differences between stakeholders and project-affected peoples).¹³

Box 1: Stakeholders and affected communities

Stakeholders are persons or groups who are directly or indirectly affected by a project, as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively. Stakeholders may include affected communities or individuals and their formal and informal representatives, national or local government authorities, politicians,

¹⁰ Vanclay, F., Esteves, A.M., Aucamp, I., & Franks, D. (2015). [Social impact assessments: guidance for assessing and managing the social impacts of projects](#). International Association for Impact Assessment.

¹¹ Franks, D. (2012). [Social impact assessment of resource projects](#). International Mining for Development Centre, Mining for Development, Guide to Australian Practice.

¹² Franks, D., Brereton, D., Clark, P., Fidler, C., & Vanclay, F. (2009). [Leading practice strategies for addressing the social impacts of resource developments](#). 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; International Finance Corporation (IFC) (2012). [IFC performance standards on environmental and social sustainability](#). World Bank Group.

¹³ Kemp, D., & Owen, J.R. (2013). [Community relations and mining: Core to business but not “core business”](#). *Resources Policy*, 38(4): 523–31.

religious leaders, civil society organizations and special interest groups, the academic community and other businesses.¹⁴

The “stake” that each of these different individuals or groups has in a project will vary. For example, while some may be directly affected by the potential social impacts of a project, others may be resident in another town, state or country but wish to communicate their concerns or suggestions to the project proponent. Moreover, there are those who have leverage to influence the project, such as government regulators, political or religious leaders and others active members of the community. There are also stakeholders who, because of their knowledge or stature, can contribute positively to the project, for example, by acting as an honest broker in relationship mediation.

Project-affected peoples include all individuals or groups impacted in some significant way by a project’s activities.¹⁵

According to a report commissioned by The International Mining for Development Centre (IM4DC), leading practice is based on systems and frameworks that include the following elements:

- *Life cycle approach*: proponents identify and respond to environmental, social and health impacts at all stages of mining activities, including beyond the life of the operation.
- *Engagement*: proponents regularly engage with community and government, prioritising active processes that seek community participation in decision-making.
- *Partnerships and community development*: proponents partner with affected communities and other impacted stakeholders to address issues of concern and mutual interest and identify strategies to support community resilience in the longer term.
- *Coordination of cumulative impacts*: multiple project proponents in a region jointly coordinate the management, monitoring and mitigation of cumulative impacts.
- *Adaptive management and flexibility*: proponents monitor and proactively respond to changing circumstances and increased knowledge of impacts.¹⁶

¹⁴ International Finance Corporation (IFC) (2007). [Stakeholder engagement: A good practice handbook for companies doing business in emerging markets](#). World Bank Group.

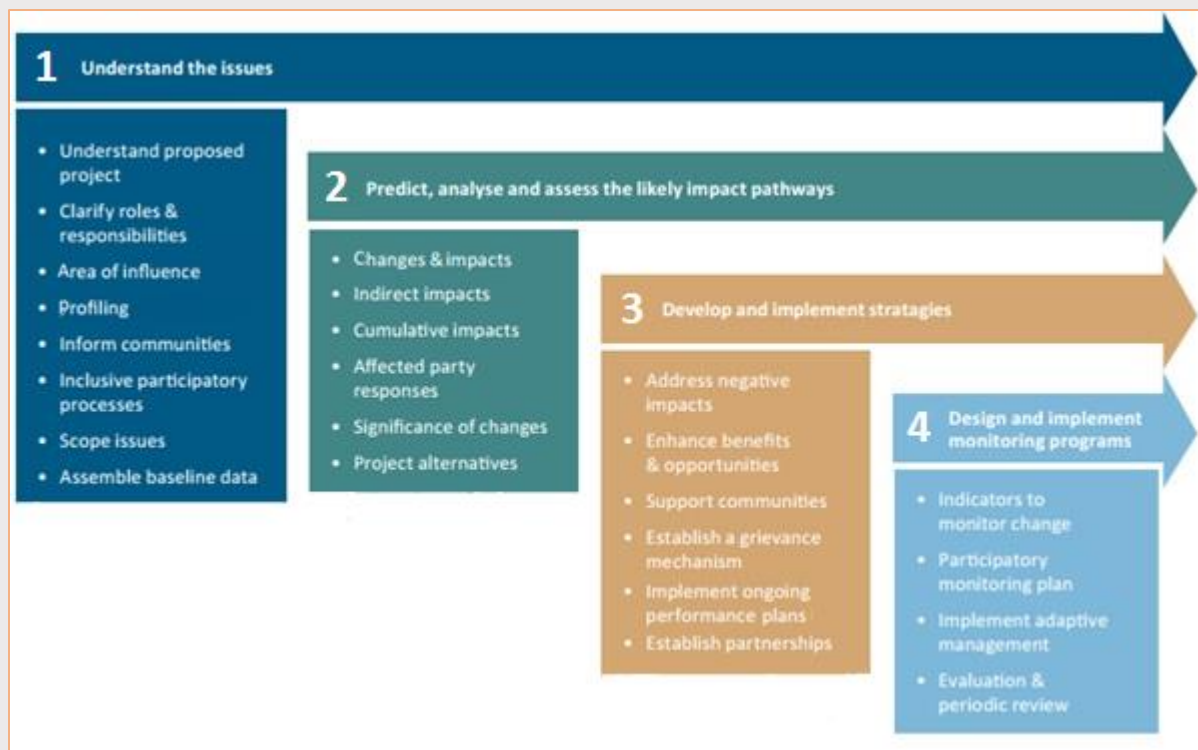
¹⁵ The World Bank (2012). [Mining community development agreements: Source book](#), March.

¹⁶ Franks (2012), p. 8.

Process

The process of impact assessment is a composite of numerous activities or tasks. The selection of activities to be undertaken is context dependant and based on specific project requirements (see Figure 1 for a list of possible activities).¹⁷

Figure 1: The phases and activities of environmental, social and health impact assessment



Activities are carried out using a wide range of qualitative and quantitative research methods and tools devised for impact assessment practice. The selection of methods is dependent on what needs to be measured and on the broader impact assessment objectives. An integrated approach that combines several methods and tools provides the most comprehensive and reliable prediction of impacts and associated mitigation and management strategies (see Box 2 for more detail).

Box 2: Methods, approaches and sources of information

Much of the analytical work in impact assessment centres on prediction of potential change in key variables using a range of qualitative and quantitative research methods and tools. The tools and methods commonly applied include (but are not limited to):

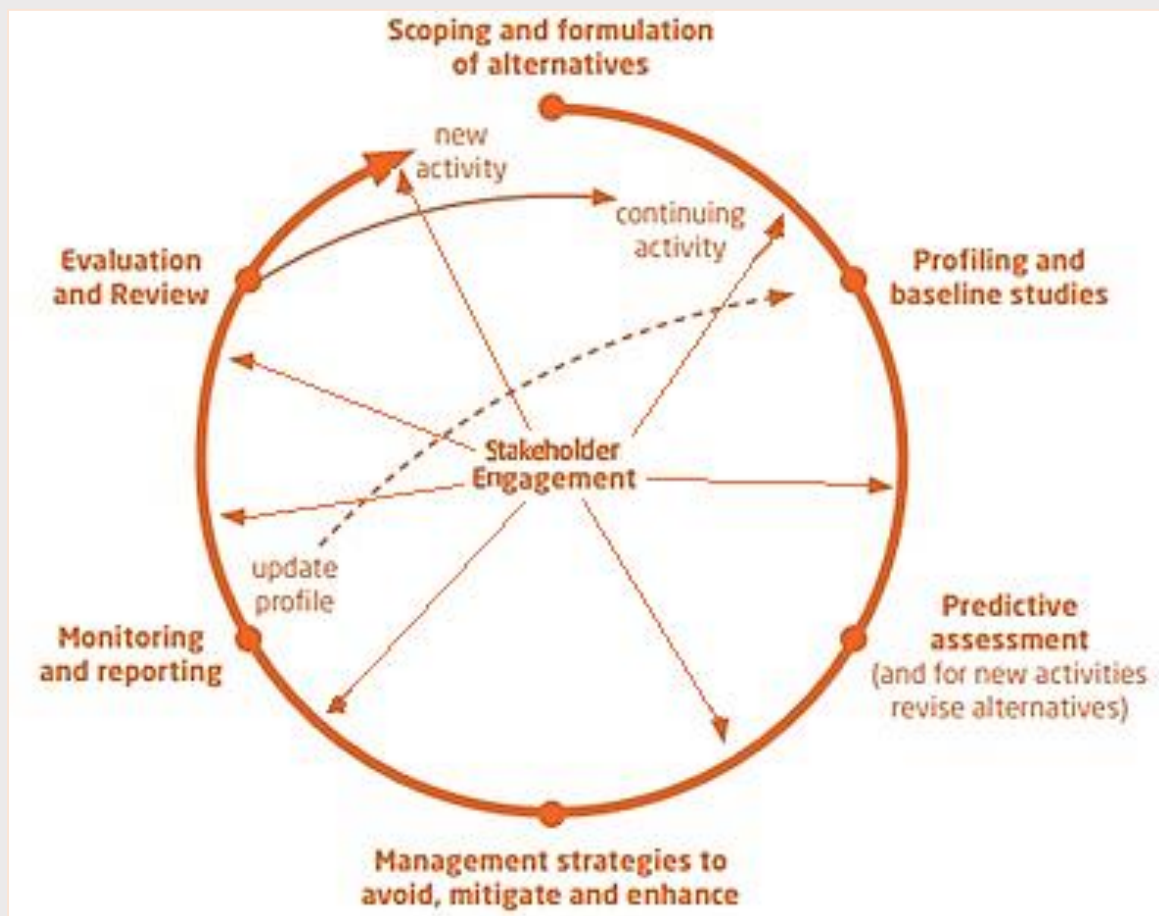
- *trend extrapolations*: projecting current environmental, social and health trends into the future;
- *population multipliers*: extrapolated increases in population size are used as coefficients for the change in other indicators, such as biodiversity, employment or demand for housing, infrastructure and health services;

¹⁷ For further detail on each activity, see Vanclay et al (2015), pp. 36–63.

- *consulting experts*: use of expert knowledge, such as trained environmental, social and health scientists, professional consultants, local/regional authorities or knowledgeable citizens;
- *scenarios*: exercises to develop the likely, alternative or preferred future of an ecosystem, community or society; they can be used to compare different outcomes (best versus worst case); and
- *comparative studies*: examination of how the ecosystem or affected community have responded to change in the past, or the impact on other ecosystems or communities that have undergone a similar action.

Leading practice seeks to maximise the positive outcomes and minimise harm using an adaptive participatory management approach. In this approach, impact assessment is conceived as a learning process, in which initial assumptions and preliminary understandings need to be regularly updated based on new data and on-going consultation with affected communities and other impacted stakeholders. The environmental, social and health impact assessment process, based on an adaptive participatory management approach, can be arranged conceptually into distinct but iterative phases (see Figure 2).

Figure 2: The phases of SIA within an iterative adapted management process¹⁸



¹⁸ Adapted from Franks (2012), p. 6..

Complementary documents, plans and strategies

Implementation guidelines address the application of environmental, social and health impact assessment at the project level and at all project phases. Guidelines often improve the quality and effectiveness of impact assessment by providing:

- detailed technical guidance for preparing the impact assessment;
- criteria for the inclusion and/or classification of stakeholder groups in the planning process;
- information about impact assessment process, appropriate methods and expectations;
- assurance that community engagement and participation are enshrined as important features of all activities associated with impact assessment; and
- information that relates to implementation of associated plans and strategies, such as environmental, social and health management plans.

Examples can be accessed via the following links: The European Commission ([guidelines, guidance](#)), [Greenland](#), [Northern Territory](#) (Australia) and [Queensland](#) (Australia).

The availability of guidelines does not necessarily correlate to good practice.¹⁹ The tendency to advise that appropriate tools and processes should be selected by practitioners to suit context and circumstances may be inadequate for practitioners who lack the experience and expertise to make such judgments. In those instances, more detailed operational guidance is required on how to make sound methodological choices and select the best available methods.²⁰

Over the past decade, environmental, social and/or health management plans have emerged as a vital link between impact assessment, ongoing management and proactive response to environmental, social and health issues.²¹ These plans describe management actions that can be taken at each stage of a project to avoid or mitigate impacts and maximise benefits. Governments and finance institutions, such as the International Finance Corporation (IFC), increasingly use management plans as requirements for project approval and finance.²²

Management plans can be developed in partnership with regulatory agencies and community, and identify the responsibilities of each party in the management of impacts, opportunities and risks. They can provide the facility to coordinate project activities with

¹⁹ Morgan (2012); Adelle, C., & Weiland, S. (2012). [Policy assessment: the state of the art](#). *Impact Assessment and Project Appraisal*, 30(1): 25–33.

²⁰ Noble, B., Gunn, J., & Martin, J. (2012). [Survey of current methods and guidance for strategic environmental assessment](#). *Impact Assessment and Project Appraisal*, 30(3): 139–47.

²¹ These plans are referred to as social management plans, social impact management plans, environmental and social management plans, social and labour plans and environmental and social action plans.

²² See IFC Performance Standard 1. International Finance Corporation (IFC) (2012). [IFC performance standards on environmental and social sustainability](#). World Bank Group.

government planning, link activities with local and regional planning processes and, if developed with reference to other proponents' management plans, assist in predicting and managing cumulative impacts.²³ Cumulative impact assessment practice remains underdeveloped in most jurisdictions.²⁴

SIA and HIA have emerged because social and health issues have not been adequately addressed through EIA and have required different methods of analysis. However, many practitioners argue that their potential remains largely unrealised.²⁵ As previously stated, in most cases SIA and HIA remain a component of EIA and, as such, remain a subset and subordinate form of EIA which do not fully meet the standards of the international principles and guidelines. For example, a recent study demonstrates that the role of the SIAs in EIA reports is minor, account for only three to four percent of the total number of pages.²⁶

Research shows that the approach which incorporates SIA and/or HIA as subsets of EIA is generally procedural and often lacks substantive impact.²⁷ Such practice is often characterised by a lack of integration between SIA and/or HIA and the ongoing management of social and health issues once a project commences and after an operation closes.²⁸ Under this approach, a common objective of impact assessment is to produce a document for the EIA that will ensure that development consent is granted. Moreover, when integrated within EIA, SIA and/or HIA often focus on the predictive aspects and do not incorporate the participatory component.²⁹

Conclusions and recommendations

Armenia lacks detailed regulations and institutional capacity to properly assess social and health impacts of mining. The Environmental Expertise Center and the Ministry of Health do not possess theoretical and scientific knowledge or practical experience to conduct the HIA in accordance with the current law. Both the current and former Ministers of Health have indicated in official that the ministry has no instruments to conduct HIA or even estimate the

²³ Franks et al (2009).

²⁴ Morgan (2012).

²⁵ Prno, J., & Slocombe, D.S. (2012). [Exploring the origins of 'social license to operate' in the mining sector: perspectives from governance and sustainability theories](#). *Resources Policy*, 37(3): 346–57.

²⁶ Suopajärvi, L. (2013). [Social impact assessment in mining projects in Northern Finland: comparing practice to theory](#). *Environmental Impact Assessment Review*, 42: 25–30.

²⁷ João, E., Vanclay, F., & Den Broeder, L. (2011). [Emphasising enhancement in all forms of impact assessment: introduction to a special issue](#). *Impact Assessment and Project Appraisal*, 29(3): 170–80.

²⁸ Franks et al (2009); Esteves et al (2012).

²⁹ O'Faircheallaigh, C. (2010). [Public participation and environmental impact assessment: purposes, implications, and lessons for public policy making](#). *Environmental Impact Assessment Review*, 30(1): 19–27; Gillespie, R., & Bennett, J. (2012). [Valuing the environmental, cultural and social impacts of open-cut coal mining in the Hunter Valley of New South Wales, Australia](#). *Journal of Environmental Economics and Policy*, 1(3): 1–13.

possible impact on the population and communities of mining projects. In addition, in a letter to the UN Special Rapporteur on the Right to Health, the Government of Armenia stated that Armenia has no standards required for appropriate HIA.

Despite the *prima facie* sophistication of the legal framework, there are no regulatory mechanisms to ensure genuine participation of affected communities in decision making and impact assessments as stipulated in the legislation.³⁰ Agreements on resettlement and compensation during mine development are largely agreed between proponent and authorities, with limited involvement of community members or other affected peoples. A prevailing culture of secrecy that is prevalent in the sector hinders meaningful public participation. Secondary regulations and/or guidelines on impact assessment are required for the overall system to align closer with international standards. Once adopted, these regulations and/or guidelines should be cross-referenced and incorporated in model contracts. However, the adoption of secondary regulations and guidelines for social and health impact assessment should be put on hold until there is adequate capacity within regulating agencies require for more effective monitoring and enforcement of environmental, social and health impacts of mining (see Working Paper 5 for detailed analysis and recommendations).

³⁰ The World Bank (2016), [Armenia: Strategic Mineral Sector Sustainability Assessment](#), April.

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