MMSD

Mining, Minerals and Sustainable Development

January 2002 No. 120

Integrating Sustainability into Legal Frameworks for Mining in Some Selected Latin American Countries

Elizabeth Bastida

Centre for Energy, Petroleum and Mineral Law & Policy, University of Dundee, UK

This report was commissioned by the MMSD project of IIED. It remains the sole responsibility of the author(s) and does not necessarily reflect the views of the MMSD project, Assurance Group or Sponsors Group, or those of IIED or WBCSD.

Copyright © 2002 IIED and WBCSD. All rights reserved

Mining, Minerals and Sustainable Development is a project of the International Institute for Environment and Development (IIED). The project was made possible by the support of the World Business Council for Sustainable Development (WBCSD). IIED is a company limited by guarantee and incorporated in England. Reg. No. 2188452. VAT Reg. No. GB 440 4948 50. Registered Charity No. 800066

iied

International Institute for Environment and Development

World Business Council for Sustainable Development

Table of Contents

List of Charts

Abstract

The integration of the concept and tools for environmental and social management of mineral development into legal frameworks for mining is posing new challenges and an intricate task for law and policy making in the mining sector. In the context of developing economies, which are in dire need of alternatives to foster development, a major challenge lies in reconciling short-term demands for competitiveness to attract investment, with longer-term objectives of sustainability. The purpose of this paper is to offer an insight into existing practices followed by a few selected Latin American countries that have been highly successful in attracting investment in recent years, in attempting to meet such a challenge.

The paper finds that efforts being undertaken strive to accommodate sustainability concerns within highly competitive legal frameworks for mining, emphasising the concept of legal certainty and the incorporation of environmental (and social) regulation, and public participation mechanisms on a gradual basis. As for legal tools, the agenda is mainly environment-driven, compulsory Environmental Impact Assessments being adopted as a core environmental management tool. Moreover, developments for the assessment of the social impacts of mining, as well as enhanced mechanisms for public participation are slowly being introduced, with Peru providing a leading example. Notwithstanding how positive these developments are, much more needs to be done in order to shift the emphasis from restoration to prevention, improve mechanisms for compliance, integrate the full mine life cycle into environmental and social management systems, fully assess socio-economic impacts and ensure meaningful community participation in order to move forward toward a more mature and integrated system for sustainable minerals development.

I. Introduction

From the late 1980's onwards, the main driving force behind legal reform in the minerals sector has been the need to establish competitive conditions to attract private capital investment, in a context of global liberalisation and market-based systems of allocation of resources. Generally speaking, law reform has aimed at expanding market economies,[1] establishing a climate of stability and predictability in order to provide the conditions for business activity, and increased foreign investment in the economy.[2] In the minerals sector, although differing widely from country to country, some general trends have been evident in developing countries. These trends include a move towards reducing equity requirements for governments and nationals, decreasing taxation levels,[3] replacing outdated laws, improving the efficiency of the administrative process through streamlined application and approval procedures, reducing conditions open to the exclusive discretion of governments, improving title management, strengthening security of tenure and enhancing the transferability of mining rights.[4]

The process of reform has been particularly dynamic and profound in many Latin American countries, and has been a critical factor in determining the major success of the region in driving exploration expenditures.[5] The return from a model of State intervention to the traditional model of mineral tenure by strengthening private mining rights and security of tenure, streamlining procedures and minimising State interference has been at the core of the reform efforts in the region during the 1990's. This model reflects the view of traditional development regimes, which concentrate on controlling the allocation of resources in order to promote economic growth.[6]

A second driver of legal reform in the sector has been the rise of environmental concerns, and is reflected in a clear trend towards the incorporation in virtually every Constitution in Latin America of the right to a "healthy" and "balanced" environment, suitable for "human development", together with public participation rights, as well as the enactment of subsequent regulations aimed at the integration of the environmental dimension into decision making. Trends and developments in international law, increasing concerns for the negative impacts of mining raised by a booming activity, the privatisation of State mining companies, practices brought by international organisations involved in legal reform, as well as the same objective to provide clear, stable and predictable rules of the game for private investment have all provided the context and the impetus for the emergence of

[1] Seidman, A., Seidman, R. and Wälde, T. (eds.) *Making Development Work: Legislative Reform for Institutional Transformation and Good Governance* (London: Kluwer Law International, 1999)

[2] *See* a. Webb, D., "Legal System Reform and Private Sector Development in Developing Countries", and b. Shihata, I., "Preface. Good Governance and the Role of Law in Economic Development", in Seidman, Seidman, and Wälde (eds.) *supra* note 1, at p. 33 and xvii-xxvi, respectively.

[3] Barberis, D., *Negotiating Mining Agreements: Past, Present and Future Trends* (London: Kluwer Law International, 1998), at p. 213.

[4] *See* a. Otto, J., "Foreword: The Changing Regulatory Framework for Mining Ventures", (1996) *Journal of Energy & Natural Resources Law*, vol. 14 No. 3, at p. 251. *See* also b. Bastida, E., "A Review of the Concept of Security of Mineral Tenure: Issues and Challenges", *Journal of Energy and Natural Resources Law*, Volume 19, Nbr.1 2001, 31-43.

[5] *See* Sanchez Albavera, F., Ortiz, G. and Moussa, N., *Panorama Minero de América Latina a fines de los años noventa* (Latin American Mining Overview towards the end of the 1990s.) (Santiago: CEPAL/ECLAC, 1999).

[6] *See* International Institute for Environment and Development, *National Strategies for Sustainable Development:: Experience, Challenges and Dilemmas*, 6 November 1998, available at http://www.poptel.org.uk/nssd/index1.html

environmental regulation.[7] Both the objective to articulate legal systems that reflect environmental concerns, coupled with a pressing need to draft competitive legal frameworks for investment represent a typical pattern of legal reform in the sector. In recent years, growing concerns for the management of social impacts of minerals development are also begging for innovative legal answers to accommodate the expectations of all those affected.

The integration of the concept and tools for environmental and social management of mineral development, including the provision of appropriate mechanisms for public involvement into legal frameworks for mining (what will be called "sustainability" for the purposes of this paper)[8] is certainly posing new challenges (conceptual, institutional, practical) and an intricate task for law and policy making in the mining sector. Sustainability underlies the idea of placing limitations or conditions on the exploitation and management of mineral resources, and stresses the fulfilling of local needs; an approach that is in many ways at odds with the manner in which mining has traditionally been regulated. The question is even more challenging in the context of developing economies, which are in dire need of alternatives to foster development. More than often it is a sense of urgency for rapid earnings and economic development, foreign exchange to service the debt, the idea that tighter environmental regulation can discourage investment,[9] plus a lack of financial resources and technical skills, and of political will that explain a lack of initiative, cohesion, or poor implementation of sustainability-related laws.

The purpose of this paper is to offer the reader an insight into existing practices and major challenges in implementing sustainability into traditional, investment-driven, legal regimes for mining, with a focus in some selected Latin American countries. Consistent with the Eighth Challenge within the key areas of focus of research being conducted by the Mining, Metals and Sustainable Development Project ("MMSD"), the paper intends to identify the approach and, in very general terms, implementation mechanisms (norms, instruments) available in Argentina, Chile and Peru, looking at the manner they are being used and are appropriate and consistent with the idea of sustainability of mineral resources, as defined in this paper.[10]

The paper will focus on the legal frameworks of Argentina, Chile and Peru, since all of them have succeeded in drafting regimes for attracting investment, while regulating the environmental aspects of mining, and mining is, or has the potential to be, a key contributor to the economy therein.[11] It is by no means the intention of this paper to be exhaustive. It will rather provide a brief overview of the question under analysis, and focus (although not

[7] In Peru, *see* Pulgar Vidal, M., "Las Regulaciones Ambientales para la Actividad Minera en una Política de Fomento a las Inversiones en el Perú" , in *Consideraciones de un Régimen Jurídico Ambiental para la Minería en la Argentina*, Estudio analítico Nº5 – *1995, Chapter 6*, available at http://www.farn.org.ar/docs/p04/publicaciones4_f.html. As expressed by the Chilean Copper Commission, the process of enacting environmental regulations "has been a response to an international preoccupation ever greater for the environmental issues, expressed in the agendas of international organisms as the United Nations and the World Bank", http://www.cochilco.gov.cl/home/eng/frameset-sustentab.htm

[8] *See* some further elaboration on the concept of "sustainability" as used in this study, which relies on the Berlin Guidelines in Section II *infra*. The term "sustainable development" will alternatively be used in such restricted sense.

[9] *See* Pulgar Vidal, *supra* note 7.

[10] *See* http://www.iied.org/mmsd/global_act/research.html#ongoing

[11] *See supra* note 5.

comprehensively) on a few issues regarded as instrumental to an understanding of the approach adopted by the countries under study, on the basis of literature analysis.[12]

Within those limitations, it is hoped that it will contribute positively to a broader range of research efforts aimed at identifying strengths and shortcomings of existing sustainable development mechanisms, as well as best practices for implementing tools of change towards sustainability, carried out in the frame of the MMSD project.

Finally, as this paper is a part of a wider ongoing research effort intended to analyse the accommodation of mineral legal frameworks for mining to the concept of sustainable management of mineral resources, further research findings will be available as it advances. Thus, a more complete version of this study, covering additional aspects, would be available at a later stage.

II. A Workable Framework for Sustainability in Mining: The Berlin Guidelines

Sustainable development as related to a natural resource that is in essence depletable as it is mined, has often been seen as an oxymoron. Further, the traditional manner in which mining has been carried out for centuries has tended to emphasise short-term gains, with no consideration for the negative impacts on the environment and communities where the project takes place, not only during operations, but also beyond mine closure. Increasing awareness for sustainability concerns, coupled with technological developments, have shifted the centre of the debate from whether to how mining can be sustainable. From that perspective, sustainability in mining involves at least the following dimensions:[13]

- The environmental dimension emphasises the sustainability of the natural environment and the stock of natural resources;
- The social dimension underscores social and cultural sustainability, what relates both to questions of distribution of benefits and costs of mining, and of process, that refers to how decisions are made and how all stakeholders are involved in decision-making;
- The economic dimension highlights the economic sustainability of human living standards. An important issue is substitution, and in this sense depletion of a resource could be compatible with sustainability if the interest from the revenues generated from mining are reinvested in building human and social capital, or in other sustainable activities.

Among those multiple dimensions of sustainability, this paper deals with the integration of the concept and tools for environmental and social management of mineral development, including the provision of appropriate mechanisms for public involvement in a context of mineral investment promotion, and taking into consideration the particular questions raised

[12] Please note that questions of land-use and indigenous peoples rights have not been included for analysis in this paper. As to public participation, analysis on access to justice also remains outside the scope of this study.

[13] Eggert, R., "Sustainable Development and the Mineral Industry", in Otto, J and Cordes, J. (eds.), *Sustainable Development and the Future of Mineral Investment* (Paris: United Nations Environment Program, 2000) at 2-2 and 2-3.

at every section of the mine life cycle (exploration, development, mining, rehabilitation, post-mining) as key concepts for defining sustainability.14 In that regard, it addresses some aspects of the fourth "pillar" of sustainable development: governance, law and institutions.[15]

Governments have a crucial role to play in designing a solid foundation for the effective utilisation and management of mineral resources in ways that balance environmental, social and economic interests so as to contribute towards sustainable development. From the industry's viewpoint, it is important to have a regulatory system that is stable, transparent and appropriate to the conditions of the country. However, while a few nations have partly defined a framework to address some sustainability aspects, in most of them these concepts remain embryonic.[16]

Although Agenda 21 underscored the need for guidelines for natural resources development, there is no specific chapter dealing with the minerals sector. A host of provisions are of direct or indirect relevance to mineral development, though.[17] Perhaps the "Berlin Guidelines" provide the most useful guidance for mining sector governance in the context of sustainable development.18 Drafted in 1991 as the outcome of the Round Table Conference organised by the United Nations and the German Foundation for International Development, they served as a basis for the first edition of the 1994 Environmental Guidelines for Mining Operations prepared by the UN Department of Economic and Social Development and its Commission for Sustainable Development, and the United Nations Environment Programme (UNEP) at request of a number of countries looking for environmental guidance. The final draft of a second edition of the Guidelines reflecting the changes occurred within the mining sector and with sustainable development particularly in the evolution of legal, fiscal and regulatory policies, and growing awareness for developing tools for managing the social impacts of mining has been adopted. The Guidelines provide a model, rather than a blueprint, for sound and sustainable management of mineral development, and should be amended and improved according to the specific needs of each country.

The Berlin Guidelines provide some criteria that is relevant for the analysis conducted in this paper, as they acknowledge the need to:

- recognise environmental management as high priority, notably during the licensing process and through the development and implementation of environmental management systems. These should include early and comprehensive environmental impact assessments, pollution control and other preventive and mitigative measures (among other measures and procedures);[19]

[14] Thus, the economic dimension of sustainability, as well as issues of economic and social distribution, as described above, remain outside the scope of the paper.
[15] Danielson, L. and Leyton, P., "Sustainable Development: Emerging Concepts of Governance in the Minerals Industries (*RMMLF* Paper 9, 2001).
[16] Otto, J., "Institutional Frameworks: Process and Implementation" in Otto and Cordes (eds.), *supra* note 13.
[17] *See* Pring, G., Otto, J. and Naito, K., *Trends in International Environmental Law Affecting the Minerals Industry*, 17 Journal of Energy and Natural Resources Law, Volumes 1 and 2, 39-55 (Part I) and 151-177 (Part II), 1999.
[18] Berlin Guidelines, **ST/TCD/20** United Nations Environmental Guidelines for Mining Operations Compiled by United Nations Department of Economic and Social Affairs (UNDESA) and United Nations Environment Programme Industry and Environment (UNEP) as revised in 1999, available at http://www.mineralresourcesforum.org/Berlin/index.htm. UNEP, *Compendium of Guidelines for Mining and Sustainable Development* (Final Draft April 2001)
[19] *See* a Glossary of some of these concepts *infra* in Annex I

- recognise the importance of socio-economic impact assessments and social planning in mining operations from the earliest stages of project development;
- ensure participation of and dialogue with the affected community and other directly interested parties on the environmental and social aspects of all phases of mining activities;
- encourage long term mining investment by having clear environmental standards with stable and predictable environmental criteria and procedures.

Consistently, the Guidelines state that if sustainable development is defined as the integration of social, economic and environmental considerations, then a mining project that is developed, operated and closed in an environmentally and socially acceptable manner could be seen as contributing to sustainable development.20 We will see what governments are doing to provide the framework and the legal tools for sustainable minerals development, in the sense delimited by this paper. Prior to that, some developments on the matter in regional initiatives will be revised.

III. Some Developments in Regional Initiatives

Latin American countries have embraced the challenge of sustainable development, as acknowledged in the 1994 Summit of Americas, and reinforced in the action plan approved in the Declaration of Santa Cruz de la Sierra (1996), leading to significant efforts towards the implementation of sustainable development as related to economic activities.21 Ratification by Argentina, Peru and Chile of core international instruments embracing sustainability, also reflect their commitment to such a goal.[22]

The Action Plan of a strategy for sustainability in the Americas, as stated by the Declaration of Santa Cruz de la Sierra emphasises the countries' efforts to incorporate sustainability into the design and formulation of public policies from the very outset, particularly in economic and fiscal policies, and called for the fullest possible participation of civil society in the relevant planning processes (principles 4 and 10).23 It comprises inter alia:[24]

- Improvement and harmonisation of legislation, plus a guarantee of compliance therewith, including strengthening of environmental legislation, regulation of proprietary rights to different productive resources, transparency of institutional roles, and the rights and obligations of citizens and their organisations;

[20] *See* Berlin Guidelines, *supra* note 18, at p. 5.
[21] *See* a. Barrera-Hernández, L., "The Legal Framework for Indigenous Peoples' Participation in Oil & Gas Development Decision-Making in Latin America. The Cases of Argentina, Colombia and Peru", in Proceedings of [*Conference on Public Participation in Development Projects*], International Bar Association, Section on Energy and Natural Resources Law, Academic Advisory Group, Vermont Law School, May 25-27, 2001. *See* b. Novoa, L., "Sustainable Development and its Relationship with Mining and the Law", RMMLF 1997, 7-19;
[22] Barrera, *supra* note 21 a. The high level of adherence of the countries of the Southern Cone to international environmental agreements has been highlighed. *See* Contributions Formulated at the Preparatory Meeting of the Southern Cone for the World Summit on Sustainable Development Inclusion in a Latin American and Caribbean Regional Platform, in http://www.eclac.org/ (visited 25/09/2001)
[23] http://www.latinsynergy.org/tp12.htm; http://www.latinsynergy.org/tp12.htm
[24] Mining is not specifically addressed in this document, although chapter III on Natural and Environmental Resources includes initiatives seeking to protect and make rational use of natural and environmental resources in energy, water, forests and biodiversity.

- Promotion and strengthening of citizen's participation, ensuring that they possess sufficient information to arrive at and carry out decisions which foster sustainable development.
- Heightened competitiveness of the economies, enterprises and individuals, at the same time ensuring sustainable development.
- A suitable institutional framework.

As to regional instruments for the mining sector during the 1990s, an overriding goal has been fostering an enabling environment for private mining development.25 This was reflected in the refocus of ECLAC's strategies towards enhancing regional mining competitiveness. A favorable climate for investment, including non discrimination to foreign capital registration, adequate treatment in case of expropriation, international arbitration, agreements for investment protection, mining laws providing for security and continuity of tenure, plus a stable and equitable tax regime are considered essential conditions to establish an enabling environment for private capital investment in the sector.26 An important aspect of the investment climate has been reflected in the integration initiatives of the region. In this way, Argentina and Chile have signed and ratified a Mining Integration Treaty that facilitates the development of deposits straddling the shared border.

The major expansion of mining in the region throughout the 1990's prompted the emergence of a number of inter-governmental associations, the most relevant one being "Conferencia Anual de Ministros de Minería de las Américas" (Mines Ministers of the Americas Annual Conference (CAMMA) in 1995. A look at the aim of the association shows a shift from investment attraction as an overall aim in the "Santiago Declaration" issued in December 1996, towards promoting sustainable development in the Latin American region in the second conference held in Arequipa (1997).

The Vancouver Declaration, October 5 and 6, 2000, for the Fifth Annual Conference of Mining Ministries of the Americas hosted by the Department of Natural Resources of Canada contains a number of recommendations for the implementation of sustainable development, particularly in questions such as:

- Supporting and strengthening community capacity to participate in the assessment of opportunities and challenges, ensuring the full use of legal mechanisms for public participation;
- Considering mine closure, and a formal plan for closure, from the outset of each project in order to enable mining to contribute to sustainable development while facilitating the existence of clear and stable conditions for achieving economic, environmental and social well-being.

Such initiatives further strengthen the view that the region is embracing the challenge of sustainability in the mining sector, although actual implementation is somehow patchy and mainly focused on environmental aspects. Next section intends to further enlighten the

[25] *See* The World Bank, *A Mining Strategy for Latin America and The Caribbean* (Washington D.C.: The World Bank, 1996) at xviii.
[26] *See* also a similar set of requirements in La Havana Declaration, ECLAC, 1994.

understanding of the approach adopted, and the extent to what sustainability is being integrated in the countries under study.

IV. The Approach for Integrating Sustainability: Main Findings

IV.1) Constitutional Framework - Mineral Law . [27]

As in most Latin American countries, in Argentina, Chile and Peru mineral resources are vested in the State domain pursuant to their relevant Constitutions.28 The regime for the acquisition, maintenance, transfer and cancellation of mineral rights, as well as for establishing the rights and obligations of the parties and dispute resolution rules has been implemented by means of mining codes in Argentina, Chile and Peru.29 Following Latin American tradition, these countries have all adopted a concession system whereby a mining claim is granted to the first applicant, provided certain requirements are met. As to the legal nature of mineral rights granted under the concession system, exploitation concessions have all the incidents of real property rights and so, they are freely transferable and mortgagable, and are protected by constitutional guarantees.[30]

As any other property right, the use of private mining rights must be in accordance and within the limits of the laws that regulate their operation,31 as health and safety and environmental regulation.[32] Thus, the Legislative Power is entitled to regulate –on a reasonable basis- the manner whereby the rights recognised under the Constitution will be exercised so as to be harmonic with the public interest. This is consistent with the doctrine of the "social function of the property" that argues that the exercise of a right must benefit not only its holder, but also the society as a whole. Such a doctrine is embedded in the San José de Costa Rica Covenant that has been signed and ratified by all the three countries under study.[33] Those rules provide a reasonably clear framework for the environmental and social regulation of mining rights and the interpretation of restrictions on ways to use of manage mineral resources.

Moving on to "sustainability" provisions, Argentina, Chile and Peru have recognised the right to a healthy and balanced environment, as well as the duty of the State to provide for the protection of such right. Thus:

The **1853 Constitution of Argentina** (as reformed in 1994) has adopted the concept of "human development" and the principle of intergenerational equity in section 41 which grants any inhabitant the right to enjoy a healthy and balanced environment, suitable for human development, so as

[27] Complete legal quotations of the instruments mentioned in this paper are *infra* included in the Selected Bibliograpy.
[28] In Argentina, being a federal country, minerals are vested in the Provinces' eminent domain ("*dominio originario"*) (Section 124 National Constitution, as reformed in 1994). Chile, section 19 Nbr 24; Peru, section 66.
[29] 1887 Argentinian Mining Code ("AMC"); 1983 Chilean Mining Code ("ChMC"); 1993 Peruvian Mining Law ("PML").
[30] AMC, section 12; Organic Constitutional Law of Mining Concession of Chile, section 6; PML: section 10.
[31] Constitution Argentina: section 14; Peru: section 70 – Chile: // Chilean Organic Constitutional Law (Section 7)
[32] AMC, section 282; PML, section 48; ChMC, section 116. *See* Sabsay, D. and Onaindia, J. M., *La Constitución de los Argentinos –Análisis y comentario de su texto luego de la reforma de 1994-* (Buenos Aires: Errepar, 1994), pp. 44-45.
[33] American Convention on Human Rights, San Jose de Costa Rica Covenant.

productive activities meet the needs of the present without compromising the needs of future generations to meet their own needs. Such provision is also a source of obligations both for individuals (who *have the duty to preserve the environment),* and for the State that *will provide for the protection of this right, the rational utilisation of natural resources, the preservation of natural and cultural heritage, and biological diversity, and environmental information and education…*[34]

The 1993 Political Constitution of Peru recognises human protection and respect for human dignity as the supreme goals of society and the State. Section 2, 22 thereof sets forth that "every person has the right…to enjoy a balanced environment suitable for the development of life," while section 67 stipulates that the State will establish the environmental national policy, and it will promote sustainable use of this natural resources. Section 2, 4 and 5, acknowledges the right to information, while the Code of the Environment and Natural Resources recognises in section VI, Preliminary Title, the right of any person to participate in the definition of policies and the adoption of actions related to the environment and natural resources, at a national, regional and local level. The Organic Law of Sustainable Use of Resources Nbr 26821 does also state that citizens have the right to be informed, and to participate in the definition and adoption of policies related to the conservation and sustainable use of natural resources.[35]

The 1980 Political Constitution of Chile consecrates in Article 19 Nbr. 8 the right to live in an environment free of pollution. By the same token, it stipulates the duty of the State to ensure that such a right is not affected, and to observe the preservation of nature. Such a formula, whereby environmental provisions are restricted to nature and pollution, has been later supplemented by a broader interpretation of what "environment" is, as the Law of Environmental Basis enacted in 1993 brings a "human dimension" and the concept of sustainable development, to the traditional environmentalist approach adopted by the Constitution.[36] This same norm provides for mechanisms for participation.37 It also authorises to establish specific restrictions on the operation of certain rights to protect the environment, which, in a broad interpretation of the term, comprises both the aim of ensuring the right of all people to live in an environment free from contamination, and preserve natural resources. Section19 Nbr. 24 2nd paragraph, expressly authorises to set limitations and obligations derived from the social function of property, which comprises what is required for the "conservation of the environmental heritage".[38]

IV.2) The Relationship of Mineral Law and Environmental Regulations

An important question when integrating sustainability, is whether environmental or sustainability regulations will be intertwined within the process to obtain mineral rights, as adopted in Venezuela, or whether the environmental permitting process is completely

[34] The Argentinian Constitution as reformed in 1994 allows room to public participation in decision-making by adopting the mechanism of "citizen initiative" whereby citizens are allowed to propose and submit law proposals (section 39), and "citizen consultation" whereby a draft law can be subject to either binding or non binding consultation.
[35] *See* also the Law of Citizen Rights of Participation and Control Nbr 26,300 that comprises, *inter alia*, the right of participation in Constitutional Reform and draft law initiatives, and the right of control on dismissal and removal of public officers.
[36] Sapag, A., "Evolución del Derecho Ambiental Chileno" in *RMMLF* 2001.
[37] *See infra* IV.5 (v)
[38] *See* Novoa, *supra* 21 b, at 7-21.

independent from the mineral licensing process. The latter is the approach adopted by Argentina, Chile and Peru.39 Thus the regime and procedure for acquiring, transferring, maintaining and canceling mining rights, defining rights and obligations of the right holder and powers of government officers, which are governed by mining laws, are separated from the regulation or conditions for the use of such a resource, including environmental regulation.

Such approach is considered as a best practice in terms of a competitive regime for private investment, as mining rights can be pledged or mortgaged while raising funds for the mining project, without being subject to the uncertainties and delays derived from the approval of environmental plans.40 Compliance with environmental regulations is a prerequisite for the operation of mining rights, but not for the acquisition thereof. By the same token, failure to meet certain operating obligations is punished by administrative sanctions, rather than by constituting grounds for canceling a mining right.41

Even though the countries under analysis treat mining licensing and environmental permitting as separate regimes, there is an inextricable connection between the law stipulating the use of the resource, and the regulations providing conditions and restrictions for that use to be sustainable. At least two questions can be raised here. Increasing restrictions on the operation of property rights based on public interest reasons, or what has been called "the social function of property" is a first, obvious impact of sustainability provisions on conventional regimes of mineral law in the countries under analysis. This view is reflected in the Organic Law of Sustainable Use of Resources enacted in Peru, aimed at providing a normative framework that spells out the restrictions for the operation of resources rights as established by sectoral laws.[42]

Further, and in rather practical terms, there is a need to accommodate some uncoordinated provisions between mineral law and environmental regulation. Depending on each country, environmental obligations at the end of exploration rights, or the "abandonment" of mineral rights (as stipulated in the Argentinian Mining Code), need some sort of harmonisation in the light of a common sustainability goal. Also, as for starting with exploration work the relevant Environmental Impact Assessment ("EIA") must have been approved, such a procedure can take a substantial time from the limited exploration term. In Chile, the exploration term comprises two years, subject to one renewal for equal time prior relinquishment of half the surface, while in Argentina the first relinquishment of half the exploration area must take place before one year since the exploration term has started.

---

[39] Naito, K., Remy, F. and Williams, J., *A Comparative Review of Legal and Fiscal Frameworks for Exploration and Mining: Best Practices* (London: The Mining Journal, 2001)

[40] *Ibid.*

[41] Williams, J., "Worldwide Observations on the Latin American Mining Law Model", in *Proceedings of the Dundee Annual Mining Seminar*, June 2001. In Chile, where mining is subject to the general environmental regime, it is thought that exceptional benefits traditionally enshrined in mining legislation should disappear, ideally and in the long run, and be governed by the common regime in force in each country for other economic activities. *See* Ossa Bulnes, J.L., "Mining Legislations in Latin America: Reform and Modernisation", in *RMMLF*, 1997, at p. 1-5.

[42] Such a view is reinforced whether the changing dynamic of the relationship between landowners and mine rights holders is taken into account (a matter that has been left outside the scope of this study). *See* Bastida, E., "Competitive Land-Uses in Some Selected Countries in Latin-America: Towards a Relative Precedence of Mining Land Use?", *The Dundee Yearbook of Natural Resources Law* (Dundee: Centre for Energy, Petroleum & Mineral Law & Policy, First Edition, 1997).

In some cases there is also room for synergies between legal tools used by applicable mineral and environmental laws. A good example is provided by the curious side-use of the EIA in some provincial jurisdictions in Argentina, as a tool to assess the compensations due to the landowner for the mining use of the surface land.[43] The Argentinian Mining Code has been conceived as a set of rules to define the rights and obligations not only of the State and the miner, but also of the latter in his relationship with the landowner. As an overriding principle, under the Mining Code, mining, including exploration, is a public interest activity, having held traditional precedence against any other use of land (AMC, section 13). During the exploration phase, this is reflected in the miner's temporary right to use the surface land, as long as this is compensated for the harm associated to exploration work. The landowner can request a prior guarantee for the compensation value (section 32). The usual practice up to a few years ago, when mining was minimal and the use of mining easements did not use to be very intensive, was agreeing with the miners the sum to be due for compensation, what could be fixed on a monthly basis.[44] In some cases no compensation at all was agreed upon, especially in connection to small exploitations that did not generate significant damage, consistently with the idea that mining has an overriding priority.45 However, the situation has changed as mining has intensified in recent years. By now the sum of the prior guarantee to be agreed upon with the landowner should be carefully assessed in order to get a fair and balanced deal. These are the reasons why, in some jurisdictions, the Environmental Impact Report for the exploration stage is being used as a tool to get a more clear and precise picture of the statu quo, and getting a more realistic amount of the guarantee.[46]

IV.3) A Reference to the Concept of "Rational Exploitation" in Historical Sources of Mineral Law

Some aspects of sustainability are not entirely new for mining legal regimes in the region. In fact, some rudimentary concept of "rational exploitation" of mineral resources and safety of structures and operations was first contemplated under the old colonial Ordinances designed by Spain to rule mining in its American colonies (what would later be core sources of subsequent independent Republics in the countries under study).[47] Mines had to be

[43] Krom, B., *La Minería Sustentable del Milenio* (Buenos Aires: Editorial Estudio, 2000)
[44] *Ibid*., at p. 108; *see* Catalano, E., The Legal System of Mining Concessions in Argentina, *RMMLF* 1997 2D.
[45] Catalano, *Ibid*.
[46] *See* Krom, *supra* note 43, at p. 108.
[47] Ordinance v, Title 11. Toledo Ordinances (1574) show a remarkable concern for the sound exploitation of the mines (namely, to employ expert miners, so as "not to ruin the mines"). Safety requirements were of such importance, that the miner was deprived of the licence whether the mine was unsafe, and would not be returned until safety measures were put in place (ordinance vi). They also provide rules for mines' development, obligations to keep mines safe and clean under penalty of a fine (Ordinances v), and civil and criminal liability in case of demolition of safety constructions and the inspection of the "*Alcalde"* or Mines Supervisor twice a year (Ordinance I).. New Spain-Mexico Ordinances (1783), the most important body of laws enacted by authorities in Hyspanamerica, and "one of the finest examples of a workable legal framework for mining", contained "elaborate mechanisms for the working of mines, including safety, flooding and mine drainage" since it was regarded as most important that these are "*kept safe and comfortable for the development of work, even those that are abandoned by their first owner*" (Title IX, article 1) (*See* Lacy, J., "Going with the Current:: the Genesis of the Mineral Laws of the United States", [41] *Rocky Mountain Mineral Law Foundation*, 10-1/55). They provided for tight technical supervision and assistance from mine experts, specially in case difficult work have to be performed, as well as strict requirements for strengthening pillars (article 4). The destruction of pillars was penalised with up to ten years of imprisonment (article 7). The mines deputy, together with the Notary or two witnesses and the mine expert, were required to visit the mines under operation twice a year or once a year if was not possible otherwise, and were empowered to request o modify practices for the better safety, conservation or mine work. If these recommendations were not implemented, the miner was subject to fines up to the forfeiture of the mine, making it available for denunciation from another person (Title 10). These Ordinances do even provide for a few provisions regarding mine closure. In effect, prior to the abandonment of a mine, the miner had to give notice the Mine

developed by actual, effective and sound work, in compliance with minimum requirements both inside the mine (for the extraction of mineral), and outside the mine, in connection with technical quality standards for exploitation, and measures for health and safety.[48]

Those early concerns would be later followed by legislation enacted in the countries under analysis. In Argentina for example, the Mining Code has traditionally adopted the concept of "rational exploitation" (by embracing the rules set up by the old Ordinances), comprising a handful of provisions aimed at protecting the mines themselves from wasteful, unwise, high-grading exploitation.[49] The General Mining Law of Peru stipulates that "mining operations will be carried out in accordance with systems, methods and techniques aimed at the best development of the activity".[50]

As to environmental provisions, a few scattered ones had already been incorporated in legal frameworks for mining by the 1980s, as in Argentina, although drafted in broad terms and lacking enforcement mechanisms.[51]

IV.4) A Central/Sectoral Approach to Environmental Regulation

Constitutional provisions have been implemented basically by means of two main approaches as related to mining, either by application of a general environmental law applicable to every productive activity ("central approach"), or by the enactment of specific sectoral provisions ("sectoral approach").

- Chile has adopted a "central" framework environmental law (the said Law of Environmental Basis enacted in 1993) which is applicable to mining.
- Argentina has adopted a sectoral approach. Being a federal country, special emphasis has been placed in coordinating national and provincial powers to regulate environmental matters in the mining sector. This has been done by enshrining environmental regulations in the same Mining Code, which is applicable nation-wide, thus achieving great uniformity among the provinces in the application of environmental regulations to the mining sector. The Mining Code comprises a management framework for the distribution of powers between federal and provincial governments,[52] not only for mineral tenure aspects, but also for environmental regulations.
- Peru had initially embraced a central approach by application of the Environment and Natural Resources Code.[53] However, firm opposition against it (which Chapter XII was devoted to the regulation of mineral resources) resulted in its modification, and the

---

Deputy in order to be inspected, measured and mapped. All this information was filed, and was available at anyone's request (18). The aim was to provide with accurate information about the status of the mine for future potential miners.

[48] Vildósola Fuenzalida, J., *El Dominio Minero y el Sistema Concesional en América Latina y El Caribe* (OLAMI/ECLAC, Caracas, 1999), at p. 99.

[49] Section 17 of the Mining Code, which permits the suspension of mining in case there is a danger for the conservation of the mine, provides an example in this regard.

[50] Section 48.

[51] Later, a few rudimentary environmental provisions were incorporated as further conditions for the operation of mining rights in the 1980 Reform of the Mining Code. In the same opportunity, some environmental regulations were introduced for the regime of mining agreements that such amendment had adopted, and that would be derogated in the 1990s' amendments).

[52] Di Paola, M. and Walsh, J., "Las Actividades de la Industria del Petróleo y el Gas y la Sustentabilidad", in Walsh et at (ed.), *Ambiente, Derecho y Sustentabilidad* (Buenos Aires: La Ley, 2000), at p. 153.

[53] Legislative Decree Nbr. 613, 8 September 1990.

adoption of a sectoral approach. Thus, the Law of the Promotion of the Investment in the Mining Sector abrogated the provisions on the National Environmental Code related to the mining industry, incorporating a specific set of environmental rules for mining investment Such rules were also incorporated into Chapter Fifteenth of the Single Revised Text of the General Law of Mining.[54] The core piece of environmental regulation for mining in Peru is the Supreme Decree Nbr. 016-93-EM (1/5/1993) that established the Regulations for the Environmental Protection of Mining and Metallurgical Activities.[55] In order to establish guidelines for mining and metallurgical activities, the Ministry also elaborates guidelines of environmental and mining management at a national level.

Consistently with these legal techniques, in Chile the law is administered by a central inter-ministerial environmental co-ordinating committee composed by all the ministries organised at the national level (National Environmental Commission, or Comisión Nacional del Medio Ambiente –CONAMA-) plus regional commissions.[56] The core function of the CONAMA or COREMA as the case may be in the EIA System is to coordinate the participation of all governmental agencies having some sort of environmental competence related to the project. The aim is to provide certainty as to what the relevant authority is to deal with all environmental aspects.[57] In Argentina, the competent authority is either the mining authority, as occurs most frequently, or the environmental authority, as opted by each province. In Peru, jurisdiction belongs to the Ministry of Mines, who establishes its own regulations, with a rather limited role of the national environmental agency.[58]

In any case, a constant concern has been placed at finding mechanisms for building up appropriate environmental institutions while maintaining a climate of predictability and stability for private investment. Regional initiatives, governmental documents and specialised literature unanimously point at the need to coordinate and harmonise jurisdictional overlapping in relevant public agencies, and enhance coordination at a local level.[59]

Next chart summarises the general applicable environmental framework in the countries under analysis:

[54] Supreme Decree Nbr. 014-92-EM

[55] Decreto Supremo Nbr. 016-93-EM, 1 May 1993, Reglamento para la Protección Ambiental en las Actividades Minero Metalúrgicas (as modified by Supreme Decree Nbr. 059-93-EM, 13 December 1993), *see* Sociedad Peruana de Derecho Ambiental, *Prevención de la Contaminación Minera en las Américas. A Case Study Regarding Peru*, in Environmental Law Institute, *Pollution Prevention and Mining: A Proposed Framework For The Americas*, January 2000, available at http://www.eli.org/, at p. 2.

[56] Also the Secretary of Mining has some policy function, see the functions of the Environmental Unit at http://www.minmineria.cl/

[57] Urrutia, J., "The Beginning and the End: Liability for Pre-Existing Conditions and Reclamation Obligations in Latin America", *RMMLF* 1997.

[58] *See* a. Danielson, L. "Environmental Impact Assessment for Natural Resource Projects in Latin America", *RMMLF* 1997, Paper 8, and b. Gonzales, C., "Recent Development in Peru's Environmental Law and Policy: Its Impact on the Mining Industry", *The Dundee Yearbook of Natural Resources Law* (Dundee: Center for Energy, Petroleum & Mineral Law & Policy, First Edition, 1997.

[59] *See* Vancouver Declaration, CAMMA

Chart I

General Applicable Legal Environmental Framework		
Argentina	**Chile**	**Peru**
National Constitution as reformed in 1994, section 41 and ss. Right to a healthy environment, that enables human development	1980 Political Constitution, Article 19 Nbr. 8: right to live in an environment free of pollution.	Political Constitution as amended in 1993 Section 22, 2: "every person has the right…to enjoy a balanced environment suitable for the development of life"
-duty to preserve the environment), -duty of the State that *will provide for the protection of the environment, the rational utilisation of natural resources, the preservation of natural and cultural heritage and the biological diversity, and environmental information and education*	-duty of the State to *watch* so as such a right is not affected, and to *observe* the preservation of nature	Section 67: the State will establish the environmental national policy, and it will promote *sustainable use of this natural resources*. Section 68 imposes on the government the "obligation to promote the conservation of biological diversity and protected natural areas".
Clause 14 Federal Mining Covenant, Law Nbr 24,228: agreement to put in place policies to promote the "*rational and integral*" exploitation of mineral resources, and "protect the environment *by means of* a rational productive activity	1993 Law of Environmental Basis 19,300 rules the right to live in an environment free of pollution, the protection of the environment, the preservation of nature and the conservation of the environmental heritage	Code for the Environment and Natural Resources Legislative Decree No. 613 states that the objective of general environmental policy is the protection and conservation of the environment and natural resources so as to enable the integral development of human beings to ensure an adequate quality of life.
Law 24,585 as incorporated to the Mining Code rules *the protection of the environment and the conservation of the natural and cultural heritage that could be affected by mining activity*	(plus Decree Nbr 30 (1997), Ministery, General Secretariat of the Republic Presidency establishing the Regulation of the EIA System)	Regulations for Environmental Protection in Mining and Metallurgical Activities (Supreme Decree No. 016-93-EM) Envtl Regulations for Mining Exploration Activities (SD No. 038-98-EM)

IV.5) The EIA as the main regulatory instrument to integrate sustainability

(i) Scope

EIA is the most common procedure to assist the project proponent, government regulators and the public to predict and evaluate the potential impacts of a project on the environment, as well, as eventually, to identify alternatives and mitigation measures for using its conclusions as a tool in planning and decision-making. In order to increase the efficacy of the EIA, other environmental management tools are often used, which can be integrated into the EIA. These include, *inter alia:*

(a) Environmental Management Plans, that comprise methods and procedures whereby the company will achieve the environmental and social objectives and targets as identified in the EIA; and

(b) Environmental Monitoring Programmes, that are intended to assess the environmental and social performance of the project, to demonstrate that the project complies with the objectives set out in the EIA process and with regulatory requirements, and to provide the information required for periodic review, ensuring that environmental and social protection is optimised at all stages of the project.[60]

Argentina, Chile and Peru, as well as most Latin American countries have adopted the EIA as the main regulatory instrument to integrate sustainability. EIAs are rather developed in local legal systems, being conceived as a process rather than as a document and their goal is "continuous improvement", in the project's environmental performance, rather than just getting a permit. They treat the commitments arising from them as binding and enforceable.61 In broad terms, the assessment of social impacts and the coordination of public involvement are all included in the EIA system.

All the countries under study require the elaboration of a report or study of environmental impacts, which generally speaking include a description of:

- The mining project and their environmental impacts, including social and/or cultural aspects,
- Actions of measures to minimise, mitigate, control and/or eventually repair negative impacts;
- Environmental management plans (as the Environmental Adjustment and Management Plan in Argentina, Mitigation Measures and Reparation and/or Restoration Plans in Chile, and Environmental Adjustment and Management Program regarding ongoing operations in Peru).

In Chile, the submission of a Environmental Impact Study ("EIS") will be determined by the characteristics of the project to be assessed, and its ability to provoke harmful effects on

[60] *See* Berlin Guidelines, *supra* note 18
[61] *See* Danielson *supra* note 58 a.

the environment, population health and local communities.[62] Minor projects will require an Environmental Impact Declaration ("EID"), that is a simpler instrument done in the form of a sworn statement and which contents can allow the relevant authority to assess if the environmental impact complies with applicable environmental legislation. It could contain voluntary requirements in which case the project operator would be bound to them.

In Argentina, the EIA must be approved within 60 days since it was filed. However, if the authority does not respond within that term it is not considered automatically approved, by application of General Administrative Procedures Law that regards silence from the administration as denial. This is different than in Chile and Peru, where the EIA is approved automatically if the authority does not respond within the prescribed terms (45 working days in Peru,[63] 60 days to review the EID, and 120 for the EIS, plus 60 days in justified cases in Chile.

There is a varying range of environmental management tools available. The main tool adopted by Argentina is the Environmental Adjustment and Management Plan which must be included in the EIS, and contain all the actions for mitigation, rehabilitation or recomposition aimed at correcting any future environmental impact, up to (permissible) limits, that the operator is commited to put in place.

In Chile, environmental management tools include[64] a Mitigation Measures Plan aimed at avoiding or reducing harmful effects of the project (section 59, Regulation); a Reparation and/or Restauration Plan aimed at repair one or more environmental elements to an analogous quality than the one held before the harm was caused, or to reestablish basic properties in case the first is not possible; a Compensation Measures Plan aimed at producing or generating an alternative positive effect, equivalent to an identified negative effect (section 61 Regulation), and a Monitoring Plan to follow up the environmental aspects that are the grounds for the elaboration of the EIA.

Monitoring plans are also available in Peru. In this country, special emphasis has been placed towards the adjustment and management of ongoing operations. The tool adopted is the Environmental Adjustment and Management Programme ("PAMA"), applicable to on-going operations in the production and operational stage, that must lay out actions and investment for incorporating technologies and/or alternative measures to reduce or eliminate emissions to comply with applicable standards. PAMA can be the basis for an "stabilisation" agreement between the operator and the Ministery of Energy and Mines to not set out further requirements to the operator as long as the approved programme is complied with. Prior to elaborating the PAMA, there is an obligation to prepare a Preliminary Environmental Assessment (Evaluación Ambiental Preliminar, EVAP) in order to identify the environmental problems generated by mining.

A thorough study on environmental laws for mining in the Americas conducted by the Environmental Law Institute observed that there is an absence of specific goals, measures and technical guidance for achieving pollution prevention in the different phases of mining,

[62] Sections 2 and 12 Law 19,300
[63] Third parties are involved in verifying monitoring information. Also obligation to file an annual report signed by an environmental auditor
[64] Section 12 h), Regulation.

and that countries either lack or have inadequate legal tools or policies that support pollution prevention in critical areas such as closure planning, financial assurance, economic incentives, public participation (since the public could be involved at the scoping stage to help identify potential environmental impacts of concern to local communities) among others.[65]

(ii) Phases of the Activity covered by the EIA

As explained before, any serious attempt to integrate sustainability requirements to a mining project must necessarily cover the whole life of the project. This implies, on the first phase of the project life cycle, that for an EIA (and also socio-economic impact assessments) to have a legitimate position in the decision-making process, the issues and implications will need to be established during the concept phase, particularly once exploration moves from prospecting to larger scale sampling methods. Good environmental and social management of exploration should include an Environmental Management Plan where land disturbance occurs.[66]

On the closure phase of the project, this implies that mine closure should be planned well in advance by means of physical and social rehabilitation progrrammes that ensure the return of all affected areas, as much as possible, to their optimum economic value.[67]

Some developments have been occuring regarding the regulation of different phases of the activity in the countries under study.

- In Argentina, the EIA covers prospecting, exploration, exploitation, development, extraction, storage and beneficiation phases, including those activities aimed at the mine closure require separate EIR, and they are reviewed separately for approval. Requirements for prospecting have been eased since the EIA system was put in place. As "prospecting" was defined neither under the Mining Code nor the environmental regulations, it was not clear what sort of prospecting was subject to the EIA process. The Supplementary Norms have specified that just that prospecting work implying meaningful land disturbance requires an EIA. As to the closure phase, the operator must file another EIR, or an update or amendment of the existing one to cover it, including measures and actions aimed at avoiding environmental impacts after closure of operations. Even if the EIR must include post-closure monitoring, and no formal closure plans are required.
- In Chile, although "prospecting" has been included within the activities that require prior environmental impact assessment, as the term has not been defined, it is still unclear what sort of prospecting is subject to EIAs. By construing the law, EIAs would be applicable just to exploration work that can be harmful to the environment, what usually occurs in advanced stages of exploration, once a specific target has been identified.[68] A great deal of concern here has been the interfaces between environmental

[65] Environmental Law Institute, *Pollution Prevention and Mining: A Proposed Framework For The Americas*, January 2000, Research Report available at http://www.eli.org/, at page 50.
[66] See Berlin Guidelines, supra note 18.
[67] Ibid.
[68] *See* Danielson *supra* note 58 a. *See* also a. Comité Nacional Pro Defensa de la Fauna y Flora, *Prevención de la Contaminación Minera en las Américas –Estudio de Caso Chileno-*, in Environmental Law Institute, *supra* note 66, at p. 7. b. On this topic, *see* also an excellent piece of research prepared by Patricia González Zenteno, *Tratamiento*

assessment and exploration permits, which duration is for two years, extendible to two years longer, and the chances of delaying the commencement of exploration within that tight schedule while awaiting the environmental assessment approval.[69] As to the closure phase, although there are a few and general references to the closure phase throughout the law and its regulation, as well as in Mine Safety Regulations, no formal closure plans have been established.[70]

- In Peru, since the enactment of general environmental regulation for mining activities in 1993 up to 1998, there were no environmental requirements for exploration.[71] As mining concessions in Peru comprise both exploration and exploitation activities (the "single concession system"), the Ministry of Energy and Mines just established regulations to file an EIS for the exploitation stage. Since 1998 it is necessary to file an Environmental Assessment ("EA"), applicable to exploration activities which originate significant disturbance.[72] It requires the description of the project, activities to be conducted, effects, control and mitigation measures, and closure or temporal shutdown plans. As compared to the EIS, the EA requires shorter periods of approval, and there is no requirement for public hearings.[73]

As to the closure stage, closure plans must be a part of an EIA or PAMA. There is a specific non-binding document on Guidelines for Mine closure and Abandonment, while the Environmental Guideline for PAMAs does also include a chapter on Closure Plan.[74] There are no requirements to incorporate pollution prevention measures as a condition for the plan to be approved.[75] There is a draft law that would establish the obligation to file a closure plan prior to starting with operations, as a specific and differentiated document from the PAMA or EIA, including a system of financial surety.[76]

Chart II

Phases of the Activity covered by the EIA			
Stage	**Argentina**	**Chile**	**Peru**
Prospecting and Exploration	Prospecting work involving the use of heavy equipment and meaningful soil movement will be required to file an EIA. Another EIA is required for the exploration phase itself (exploration is aimed	Although Art. 8 Law 19,3000 stipulates that projects of mining development, including prospection, will be subject to SEIA., it is unclear what sort of "prospecting" is subject to	Exploration (causing significant disturbance on a relatively widespread area) requires the filing of an Environmental Evaluation.

Normativo de la Fase Minera Post Operacional en los Países Mineros Latinoamericanos y La Planificación del Cierre (CIID: November 1999), available at http://www.idrc.ca/mpri/documents/cierreminas.html

[69] *See supra* section IV.1.

[70] However, there is a draft law on mine closure under discussion. Thus, it is the first productive sector attempting to comply with the full cycle of a project. *See* http://www.minmineria.cl/.

[71] *See* Sociedad Peruana de Derecho Ambiental, *supra* note 55, pp. 9/10.

[72] Activities must originate spills and require waste disposal action, and the disturbed area to build up more than 20 platforms over more than 10 has

[73] *See* Sociedad Peruana de Derecho Ambiental, *supra* note 55, at p. 11.

[74] *Ibid. See* also Gonzales, *supra* note 58 b., at p. 115.

[75] *See* Sociedad Peruana de Derecho Ambiental, *supra* note 55

[76] *See* Gonzalez, *supra* note 68 b. at p. 59, also in the Final Consolidated Report updated on December 2000, Legal Annex to a report prepared by Cochilco, *Normativa de Cierre de Faenas Mineras en Chile*, December 2000.

	at a targeted resorce to define the technical-economic feasibility for exploitation).	SEIA.. By interpretation, exploration work that can have an impact on the environment should be subject to SEIA.	
Exploitation	EIA focused on this stage (see next chart).	Idem	Idem
Closure	A new EIA (or an update or adjustment to the existing one) has to be filed at closure stage. No closure plans or assurance for compliance. EIA must include post-closure monitoring	No closure plans required	Closure plans required as part of EIA or PAMA. However no mechanism to enforce compliance with closure and restoration plans

While the EIA mainly covers the exploitation and development phase, there have been significant developments towards expanding the use of environmental management tools on the exploration and in the closure stage. In this sense, Peru has enacted specific regulations for the exploration phase, and guidelines for mine closure.

(iii) Enforcement Mechanisms

The countries under study rely heavily on the traditional administrative (from warnings and fines to temporary and definite shutdown), civil and criminal mechanisms to enforce compliance. New approaches to enforcement, as trusts, bonds or financial sureties to guarantee compliance have not been introduced yet. Consistently, there is no mechanism either to set up a closure plan or to enforce compliance therewith (as by means of a financial surety). In addition, the voluntary use by the mining sector of environmental management systems, such as ISO 14000, is just beginning.[77] Economic instruments, which can be used as an incentive to improve environmental management, have not been developed yet. An exception is provided by a special tax benefit set to prevent and mitigate environmental impact -that will be deductible from income tax up to 5% of operative costs of minerals extraction and treatment- under the Argentine Mining Investment Law Nbr 24196.

(IV) Socio-Economic Impact Assessment

The socio-economic impacts are the outcome of the interaction between the characteristics of the project and the environment where is going to take place.[78] The assessment of socio-economic impacts is included as a part of EIAs in the countries under study.

[77] *Ibid.,* at p. 31.
[78] *See* The Berlin Guidelines, *supra* note 18.

- In Argentina, description and mitigation measures of socio-economic and cultural aspects must be addressed in the EIR. During 2001, the government has placed emphasis on the development of a sustainable development framework for mining, as an instrument to improve the application of the environmental law, and measure the impact of large- scale projects in local communities. The project consists of building up social, economic, political and environmental indicators in order to determine such impacts. The outcome is expected to be the articulation of policies between various government actors (nation, provinces, municipios), local communities and companies in order to establish lines of action for mining activity in each area, consistent with sustainable development.79

- In Chile, "environment" has been termed as a "global system constituted by natural and artificial elements of physic, chemical or biological nature, *socio-cultural* and its interactions, in permanent modification by human or natural action and that rules and conditions the existence and development of life in its different manifestations". Section 12 f.3) of the Regulations requires the description of socio-economic environment, life styles, forms of social and community organisation and customs, especially of communities protected by special laws.

- Some notable developments are taking place in Peru in this subject, as regulations in force recommend the operator to use a Community Relations Guide prepared by the Ministery of Energy and Mines (Division of Environmental Affairs). Such a Guide provides a set of guidelines for preparing a Social Impact Assessment and Community Relations Plan, and other measures aimed at an appropriate management of the relationship of companies with communities.[80] Although such guidelines are not binding, they certainly provide some insights on the direction of further developments towards the increasing use of social management tools. In this sense, similar regulations in the hydrocarbons sector in Peru instruct the operator to use a special "Community Relations Guide" (that is based on the one used by the mining sector), as the document of reference for undertaking a Community Relations Plan. Further, this section of the EIA is denominated "Social Impact Study" in hydrocarbons activities.[81]

The Community Relations Guide defines "management" of socio-economic impacts as actions taken in order to:[82]

- potentiate positive socio-economic impacts, by taking measures to expand the effect of aspects such as employment and local acquisition of goods;
- avoid or minimise negative impacts, by assessing and/or modifying actions or options that had been identified;
- compensate for impacts on third parties property rights (ex. Landowners)
- compensate for damage or loss.

[79] Mining Undersecretariat, *10 Reasons to Invest in Argentina*, Argentina Mining, at p. 21.
[80] Ministry of Energy and Mines - Dirección General de Asuntos Ambientales, *Guía de Relaciones Comunitarias* (Community Relations Guide), January 2001. The aim of the Social Impact Study is to analyse the effects that a project has over individuals, their relationships, economy and culture, and the measures to take in order to potentiate the positive impacts, and minimise or eliminate the negative impacts (page 10).
[81] Decree 003-2000, Official Gazette 28 January 2000
[82] Nbr 1.2.3, pp. 25/26.

(v) Public Participation

An essential role of the EIA is to ensure well-informed decisions. In this sense, the role of public participation in the EIA process is intended to assure the quality, comprehensiveness and effectiveness of the EIA, as well as to ensure that the public's views are adequately taken into consideration in the decision-making process.[83] As such, public participation mechanisms should be put in place as early as possible, and to the extent possible during the scoping stage of the project in order to help identify potential impacts of concern to local communities that should be addressed in the EIA.[84]

Public participation mechanisms have arisen in most cases within the EIA system in the countries under study.

- In Argentina, the only mechanism for public participation at the national level is access to information, requiring the enforcement authority to provide information to whoever requests it regarding the application of environmental provisions.[85] Although there is no other aspect of public participation at a national level, the provinces, that have retained the powers to regulate general environmental matters, can introduce public participation mechanisms, as long as they do not contradict national law. In this context, public hearings have been mainly addressed by provincial constitutions, and by a few environmental framework statutes in some provinces.[86] A major flaw of the public participation system in Argentina is that there is no obligation to pay due regard to the comments of interested parties.

  It is worth noting that rather informal mechanisms have been used as a means of public involvement. As an example, after the closure of Mina Angela in Chubut Province, adjacent community inhabitants requested a provincial deputy to ask a report on the environmental impacts produced by the mine closure.[87]

- In Chile, law 19,300 establishes citizen participation, stipulating the responsibility of national and regional environmental agencies to establish mechanisms to ensure informed participation of the organised community in the assessment process of the EIS submitted thereto (section 26). Participation under Chilean law basically consists of access to information, being mandatory the publication of an abstract of the EIS in the official government gazette and in newspapers of general circulation within 10 days after the study has been submitted (section 27). NGOs and any individual who can directly be affected by the project are allowed to learn about the EIS contents and terms of documents, and to raise objections or comments within 60 days following the publication on the EIA. If objections or observations submitted are not duly considered or weighed in the qualification resolution approving the EIS, action may be brought challenging the resolution.
  This mechanism is conceived exclusively as an information tool, rather than as a consensus-building process. Although it is positive that the law includes a mechanism to

[83] Glasson, J. et al, *Introduction to Environmental Impact Assessment* (London: UCL Press Ltd, 1996), p. 142.
[84] *See* Environmental Law Institute, *supra* note 66, p. 52.
[85] Section 268 of Law 24,585 of Environmental Protection of Mining Activity.
[86] Examples: Jujuy, Mendoza.
[87] Draft Resolution 1748. Request of information to the Executive Power on the environmental impact produced by the closure of Mina Angela in Gastre District, Province of Chubut. B.A.E. 6) (T:P: 30) 2001), at http://www1.hcdn.gov.ar/dependencias/cmineria/proyectos.htm

include the observations of those affected by the project, the approach has a few shortcomings, being rather late in the project timetable. It has been further argued that the means of publications can prevent isolated communities from getting access to this information.

- In Peru there is a mechanism of information within the EIA by means of publications in the official gazette and local newspapers.[88] Peru has also adopted public hearings as a main mechanism for public involvement, having notably improved some procedural aspects since the system was put in place, and further elaborated on the already mentioned Community Relations Guide. While initially public hearings were centralised in Lima, it is compulsory now to be held in a location close to the project.[89] Executive summaries of the project are distributed among the participants, the project results are exposed, and questions can be raised, although in written. Comments have to be taken into account for decision. There are still shortcomings in the timing and notifications that must be overcome.[90] Importantly, the mentioned Guide recognises the weaknesses of public hearings as a means to build up consensus or solutions to particular problems, as well as a starting point for communication with those affected by the project. The Guide stresses the need to initiate a process of consultation in earlier phases of the project.

To sum up, mechanisms for meaningul consultation in the countries under study are still at the formative stage. Opportunities for public participation are designed for project approval and within the EIA process, rather than as a consensus-building tool throughout the project. Although Peru has further enhanced public hearings procedures, there are still procedural obstacles for getting access to information, and to implement further action. Moreover, experience has shown that even in cases where public hearings have been implemented, effective participation is obstaculised if it is not accompanied with accessible information and capacity-building programmes. Much still needs to be done in order to provide for meaningful and effective mechanisms for consensus- building with the affected community. The following chart compiles some aspects of the EIA process:

Chart III

Tools of Environmental Management			
TOOLS	**ARGENTINA**	**CHILE**	**PERU**
EIA	Environmental Impact Report, The EIR must include an Environmental Adjustment containing all the actions for mitigation, rehabilitation or recomposition aimed at	Environmental Impact Evaluation System Environmental Impact Study, for projects that will cause significant harm. It must include a mitigation actions	Environmental Impact Study, required to new projects, reopening of a shutdown project, or increase in the installed capacity of an existing operation

See also http://www.diariojornada.com.ar/diario/noticias/2001_04_05_03_58_26.html

[88] Reference Mining Plan (Plan Referencial de Minería), www.mem.gob.pe/wmem/publica/dgm/plan-referen2000-2009/planreferencial.pdf&e=747, p. 53.

[89] *Reglamento de Participación Ciudadana en el Procedimiento de Aprobación de los Estudios Ambientales Presentados al Ministerio de Energía y Minas* (Resolución Ministerial No. 728-99-EM/VMM).

[90] *See* Barrera, *supra* note 21a.

	correcting any future environmental impact, up to (permissible) limits, that the operator is commited to put in place. An EIR must be filed for each of the stages of mining (exploration, exploitation, closure, SEE)	plan, state measures for envtl risk prevention and accident control, plan for following up envtl conditions, plan for complying with envtl law. Environmental Impact Declaration, done in the form of a sworn statement stating that the project complies with existing legislation. It could contain voluntary requirements in which case the project operator would be bound to them	Environmental Evaluation, applicable to significant exploration activities, different issues, shorter periods of approval, no requirement for public hearings
TOOLS FOR ON-GOING OPERATIONS	Must submit an EIA within one year from enactment law. Actions for future impacts will be required by the enforcement authority.[91]	Management, prevention and decontamination plans (Sections 41 to 48) for latent zones, where the concentration of air, quarter or soil pollutants is between 80% and 100% of the quality norms, or saturated zones, in which one or more envtl quality norms are exceeded.	Environmental Adjustment and Management Programme (PAMA), that must lay out actions and investment for incorporating technologies and/or alternative measures to reduce or eliminate emissions to comply with applicable standards. It must be preceded by an Environmental Preliminary Evaluation (EVAP) to identify current and future envtl proglems that maybe generated by existg mining-metallurgical operation.
Social Impact Assessments	A part of the EIA	A part of the EIA	Further developments. Development of non-binding Community Relations Guide
Public Participation	Access to information A few provincial environmental law do also provide for public hearings to be held in connection with an EIA in mining. No obligation to include comments in resolution.	Access to information. An extract of the EIS is published, and comments from the public (NGOs and those affected by the project) can be received. Whether not weighed in resolution, an action can be brought	Access to information Public hearing prior to approval of EIS. Comments have to be taken into account for decision

[91] This has given rise to a few agreements to implement actions for mine closure, for example, in Mina Angela, the only case of mine closure that has taken place in Argentina since environmental regulations were put in place.

V. Conclusions

Answers to the question of integration of sustainability are context-based, and thus determined by the legal tradition, political, economic, social and cultural background, and political will of each country.[92] However, common efforts are being undertaken in the countries under analysis, which strive to accommodate sustainability concerns within highly competitive legal frameworks for mining, emphasising the concept of legal certainty and the incorporation of environmental (and social) regulation, and public participation mechanisms on a gradual basis.

As for legal tools, the agenda has been mainly environment-driven, compulsory EIAs being adopted as a core environmental management tool. Implementation norms have further evolved, and the integration of the full mine life cycle into environmental management systems is gaining regulatory attention, exploration and closure plans having been incorporated in Peru in recent years. In addition, developments for the assessment of the social impacts of mining, as well as enhanced mechanisms for public participation are slowly being introduced, with Peru providing a leading example, and moving forward at a faster pace.

Notwithstanding how positive these developments are, the integration of sustainability into legal frameworks for mining is still in the formative stages. Much more needs to be done in order to shift the emphasis from restoration to prevention, integrate the full mine life cycle into environmental and social management systems, enhance the EIA administration, accommodate inconsistent mineral law provisions, and improve mechanisms for compliance by introducing financial assurances and closure guarantees, and adopting a mixture of regulatory and economic instruments, and negotiated voluntary agreements. Moreover, a major task lies ahead towards ensuring full recognition of the assessment of social impacts since early stages of the project, as well as meaningful community participation.

Integrating sustainability in the context of developing economies which are in dire need of alternatives to foster development face the intrincancies of reconciling short-term demands for competitiveness to attract investment, with longer term objectives of sustainability. This is perhaps the most challenging task ahead in the road towards a more mature and integrated system for *sustainable* minerals development. The understanding of regulatory strenghts and shortcomings can contribute to improving those systems. However, obstacles to implement and enforce legislation suggest that an optimum stystem may lie in the combination of regulatory and economic instruments, together with voluntary regulation.[93]

[92] Boer, B., "Implementation of international sustainability imperatives at a national level", in Ginther, K.; Denters, E. and de Waart, P. (eds.), *Sustainable Development and Good Governance* (Dordrecht: Martinus Nijhoff Publishers, 1995), at p. 112.

[93] *See* Danielson, L. and Lagos, G., "The Role of the Minerals Sector in the Transition to Sustainable Development", International Institute for Environment and Development work in preparation for the World Summit on Sustainable Development, 2001, available at www.iied.org/mmsd

Selected Bibliography

I. Primary Sources

Agenda 21, adopted by the United Nations Conference on Environment and Development (UNCED) at Rio de Janeiro, June 13, 1992, United Nations Doc.

Rio Declaration on Environment and Development, June 13, 1992, United Nations Doc.

Argentina

Constitution of the Republic of Argentina (1853), including 1994 Amendment.

Federal Mining Agreement, Law N° 24,228, Official Gazette August 2, 1993.

Law 10,273, Official Gazette November 17, 1917

Law of Mining Environmental Protection N° 24,585, Official Gazette, November 24, 1995

Law of Mining Investments N° 24,196, Official Gazette May 24, 1993, and Decree N° 2686

Law 24.375 ratified the International Covenant on Biological Diversity.

Chile

Chilean Constitution, 1980

Chilean Organic Constitutional Law of Mining Concessions N° 18,097 (1982)

Law of Bases of the Environment 19,300, Official Gazette 9 March 1994.

Regulation of the Environmental Impact Assessment System, Decree Nbr 30 (1997), Ministry, General Secretariat of the Republic Presidency, Official Gazette 3 April 1997, available at http://www.conama.cl/documentos/regla_eia.doc

Mining Code - Law N° 18,248, Official Gazette, October 14, 1983

Peru

Constitution of Peru, 1993

Environment and Natural Resources Code, Legislative Decree Nbr. 613, 8 September 1990, available at http://www.digesa.sld.pe/DIGESA/codmedio.htm#C-12

Ministry of Energy and Mines - Dirección General de Asuntos Ambientales, *Guía de Relaciones Comunitarias* (Community Relations Guide), January 2001.

Regulation of Environmental Protection of Mining Activities (Reglamento de Protección Ambiental para las Actividades Mineras), approved by Supreme Decree Nbr. 016-093-EM, as amended by Supreme Decree 059-93-EM.

Law of Investment Promotion for the Mining Sector, Legislative Decree Nbr. 708.

Law of Land Tenure of Riparian Peasant Communities Nbr 26,845, Official Gazette 26 July 1997 (Lima, 1997)

New Peruvian General Mining Law, Legislative Decree N° 109 and modifications to Law N° 23,337 (Lima, 1988)

New Peruvian General Mining Law, Single Revised Text, Supreme Decree N° 014-92-EM, Official Gazette June 4, 1992

Organic Law of Sustainable Use of Natural Resources Nbr. 26821, Official Gazette 26 June 1997, available at http://www.congreso.gob.pe/comisiones/1996/ambiente/lib05/LEY26821.HTM
and at http://www.mem.gob.pe/wmem/legisla/aa/normasger.asp

Reference Mining Plan (Plan Referencial de Minería), www.mem.gob.pe/wmem/publica/dgm/plan-referen2000-2009/planreferencial.pdf&e=747

Regulation of Citizen Participation in the Procedure of Environmental Studies Approval Submitted to the Ministery of Energy and Mines (Ministerial Resolution Nbr. 728-99-EM/VMM).

II) Documents and Research Reports

*Berlin Guideline*s, ST/TCD/20 United Nations Environmental Guidelines for Mining Operations Compiled by United Nations Department of Economic and Social Affairs (UNDESA) and United Nations Environment Program Industry and Environment (UNEP) as revised in 1999, available at http://www.mineralresourcesforum.org/Berlin/index.htm

Economic Commission for Latin America and the Caribbean (ECLAC), *Contributions Formulated at the Preparatory Meeting of the Southern Cone for the World Summit on Sustainable Development Inclusion in a Latin American and Caribbean Regional Platform*, in http://www.eclac.org/cgi-bin/getProd.asp?xml=/dmaah/noticias/paginas/5/7505/P7505.xml&xsl=/dmaah/tpl/p18f.xsl

Environmental Law Institute, *Pollution Prevention and Mining: A Proposed Framework For The Americas*, January 2000, available at http://www.eli.org/, and the following related case studies: Sociedad Peruana de Derecho Ambiental, *Prevención de la Contaminación Minera en las Américas. A Case Study Regarding Peru*; Comité Nacional Pro Defensa de la Fauna y Flora CODEFF, *Prevención de la Contaminación Minera en las Américas. A Case Study Regarding Chil*e,

and Fundación Ambiente y Recursos Naturales*, Prevención de la Contaminación Minera en las Américas. A Case Study Regarding Argentina,* also available at http://www.eli.org/

International Institute for Environment and Development, National Strategies for Sustainable Development: Experience, Challenges and Dilemmas, 6 November 1998, available at http://www.poptel.org.uk/nssd/index1.html

International Union for the Conservation of Nature and Natural Resources, *et al. Caring for the Earth: A Strategy for Sustainable Living* (David A Munro & Martin W Holdgate eds. 1991).

Sanchez Albavera, F., Ortiz, G. and Moussa, N., *Panorama Minero de América Latina a fines de los años noventa* (Latin American Mining Overview towards the end of the 1990s.) (Santiago: CEPAL/ECLAC, 1999).

The World Bank, Industry and Mining Division - Industry and Energy Department, World Bank Technical Paper No.345: A Mining Strategy for Latin America and the Caribbean (Washington D.C.: The World Bank, 1996)

Undersecretariat of Mining, Government of Argentina, Exploration activity in Argentina (Buenos Aires: Mining Investment and Regulation Department, 1999), and 10 Reasons to invest in Argentina, 2001.

UNEP, Compendium of Guidelines for Mining and Sustainable Development (Final Draft April 2001)

III) Books

Ginther, K.; Denters, E. and de Waart, P., Sustainable Development and Good Governance (Dordrecht: Martinus Nijhoff Publishers, 1995).

Glasson, J. et al, Introduction to Environmental Impact Assessment (London: UCL Press Ltd, 1996).

Naito, K., Remy, F. and Williams, J., A Comparative Review of Legal and Fiscal Frameworks for Exploration and Mining: Best Practices (London: The Mining Journal, 2001)

Seidman, A., Seidman, R. and Wälde, T. (eds.) Making Development Work: Legislative Reform for Institutional Transformation and Good Governance (London: Kluwer Law International, 1999)

Vildósola Fuenzalida, J., El Dominio Minero y el Sistema Concesional en América Latina y El Caribe (OLAMI/ECLAC, Caracas, 1999),

Walsh, Juan Rodrigo et at (ed.), Ambiente, Derecho y Sustentabilidad (Buenos Aires: La Ley, 2000).

Articles

Bastida, E., "A Review of the Concept of Security of Mineral Tenure: Issues and Challenges", Journal of Energy and Natural Resources Law, Volume 19, Nbr.1 2001, 31-43.

Bastida, E., "Competitive Land-Uses in Some Selected Countries in Latin-America: Towards a Relative Precedence of Mining Land Use?", The Dundee Yearbook of Natural Resources Law (Dundee: Centre for Energy, Petroleum & Mineral Law & Policy, First Edition, 1997).

Barrera-Hernández, L., "The Legal Framework for Indigenous Peoples' Participation in Oil & Gas Development Decision-Making in Latin America. The Cases of Argentina, Colombia and Peru", in Proceedings of [Conference on Public Participation in Natural Resources Projects, International Bar Association, Section on Energy and Natural Resources Law, Academic Advisory Group, Vermont Law School, May 25-27, 2001.

Catalano, E., The Legal System of Mining Concessions in Argentina, RMMLF 1997 2D.

Danielson, L., "Environmental Impact Assessment for Natural Resource Projects in Latin America", RMMLF 1997, Paper 8.

Danielson, L. and Lagos, G., "The Role of the Minerals Sector in the Transition to Sustainable Development", International Institute for Environment and Development work in preparation for the World Summit on Sustainable Development, 2001, available at www.iied.org/mmsd

Novoa, L., "Sustainable Development and its Relationship with Mining and the Law", RMMLF 1997, Paper 7.

Gonzales, C., "Recent Development in Peru's Environmental Law and Policy: Its Impact on the Mining Industry", The Dundee Yearbook of Natural Resources Law (Dundee: Center for Energy, Petroleum & Mineral Law & Policy, First Edition, 1997.

Ossa Bulnes, J.L., "Mining Legislations in Latin America: Reform and Modernisation", in RMMLF, 1997, at p. 1-5.

Otto, J., "Foreword: The Changing Regulatory Framework for Mining Ventures", (1996) Journal of Energy & Natural Resources Law, vol. 14 No. 3,

Pring, G., Otto, J. and Naito, K., "Trends in International Environmental Law Affecting the Minerals Industry", 17 Journal of Energy and Natural Resources Law, Volumes 1 and 2, 39-55 (Part I) and 151-177 (Part II), 1999.

Pulgar Vidal, M., Las Regulaciones Ambientales para la Actividad Minera en una Política de Fomento a las Inversiones en el Perú, en Consideraciones de un Régimen Jurídico Ambiental para la Minería en la Argentina, Estudio analítico Nº5 – 1995, Chapter 6, available at http://www.farn.org.ar/docs/p04/publicaciones4_f.html.

Sapag, A., "Evolución del Derecho Ambiental Chileno" in RMMLF 2001

Shields, D., and Solar, Slavko, "Challenges to sustainable development in the mining sector", UNEP, 2000.

Urrutia, J., The Beginning and the End: Liability for Pre-Existing Conditions and Reclamation Obligations in Latin America, RMMLF 1997

Wälde, T., "Mineral Development Legislation: Result and Instrument of Mineral Development Planning", (1988) Natural Resources Forum, Volume 12, No 2, 177-178.

Williams, J., "Worldwide Observations on the Latin American Mining Law Model", in Proceedings of the Dundee Annual Mining Seminar, June 2001.

Internet Sources

CIPMA – MMSD – MPRI, Minería, Minerales y Desarrollo Sustentable–América del Sur–, Noticias MMSD – América del Sur-, Bulletin Nbr 3, October 2001, available at www.mmsd-la.org

Cochilco (Cooperacion Chilena del Cobre, Chilean Copper Corporation), http://www.cochilco.gov.cl/home/eng/frameset-sustentab.htm

International Institute of Environment and Development (IIED), Mining, Minerals and Sustainable Development (MMSD) project, www.iied.org/mmsd

http://www.latinsynergy.org/tp12.htmhttp://www.latinsynergy.org/tp12.htm

Mining, Minerals and Sustainable Development (MMSD) project, Latin America, www.mmsd-la.org

Ministry of Mines, Republic of Chile, http://www.minmineria.cl/

Annex I: Glossary

Concepts and Issues

Environmental management	Incorporates all the activities necessary to ensure that a mining project is designed, operated and closed in an environmentally sound and socially acceptable manner.
Environmental management instruments	They contribute to the ability of the government and mining companies to control and mitigate impacts. They include EIA, Socio-Economic Impact Assessment (SEIA), Environmental Management Plan, Environmental Monitoring Program, Environmental Audit, Environmental Management System, Mine Closure Plan and Financial Surety.
EIA	It is a procedure that helps the project proponent; government regulators and the public identify the potential environmental impacts of a project before it proceeds.
Environmental Management Plan	It is the documentation of the methods and procedures by which the company will achieve the environmental objectives and targets.
Financial Assurance	Mechanism that require a mine operator to provide a financial guarantee of performance before undertaking a regulated activity. Failure to comply with the required standards authorizes the government to collect the amount of the guarantee.
Economic and other Incentives	Laws, policies and programs that provide financial and other advantages to organizations. Incentives may include preferential tax treatment, for example.
Social-Economic Impact Assessment	The objective of the (SEIA) is to provide individuals, community groups, local authorities, government and the proponent with the fullest possible understanding of the social ramifications of a proposed development. Aims of the SIA are forming an early and continuing flow of information, simplifying channels of communication, clarifying objectives of all groups in the community; encouraging public participation and involvement. The SEIA can be carried out as part of the EIA process, or as a stand-alone study
Public Participation	Opportunities for citizens and NGOs to participate in decision-making and enforcement activities, including the opportunity to have access to relevant environmental information and public hearings.
Mine life cycle	Environmental and social requirements must be closely linked to the project timetable and life cycle. For an EIA/SEIA to have a legitimate position in the decision-making process, the issues and implications will need to be established during the concept phase.
Exploration	It involves the collection of geological, geophysical and geo-chemical data to determine the mineral potential of an area. Good environmental management is an important part of any exploration program. This will normally apply only to advanced exploration.

Closure Plan	Mine closure can have a negative impact on both the physical environment and the socio-economic structure of the region. An important aspect of mine planning is the rehabilitation of disturbed lands to a stable and productive post-mining land-form, which is suitable and/or acceptable to the community, as well as socio-economic rehabilitation of the community, thereby ensuring that the benefits of the project are sustainable. The physical and social rehabilitation programs should be an integral part of the mine life cycle.

Sources: UNEP, 2001; Environmental Law Institute, Pollution Prevention and Mining: A Proposed Framework for the Americas, Research Report, January 2000, pp. 5-6; Epps, Janet and Brett, Adrian, Engaging Stakeholders, in Otto and Cordes (2000)