

**Mining, environment and communities in Peru: two case studies of Canadian
investment**

by

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Abstract

This thesis is an attempt to propose a reform in the Peruvian mining environmental legislation. To that end, it describes and analyzes the participation of different stakeholders that have contributed to the development of the current Peruvian mining industry, describes international and domestic environmental standards and their relevance for the international and Peruvian mining industry, describes pollution prevention legal tools – with special emphasis on those that are part of the Peruvian legislation, and presents two case studies of Canadian investment in Peru.

Chapter One describes the participation of different stakeholders: the Peruvian government, domestic and foreign mining corporations, environmental non-governmental organizations, and local communities and indigenous peoples. This chapter analyzes the involvement of each of those stakeholders in the new challenges that international environmental law is posing to the mining industry related to international issues, sustainable development, mining corporation's operations and civil society concerns.

Chapter Two explores the relevance of certain international documents, treaties and international environmental principles for the mining industry. It concludes that although most of these principles are incorporated in the Peruvian mining environmental legislation, their application is more a theory rather than a reality. This chapter also describes two international management systems related to environmental protection and enumerates some international mining corporations that have adopted it.

Chapter Three describes various legal tools that mining environmental regulators have utilized to develop pollution prevention legal frameworks, and evaluates Peruvian mining environmental legislation to determine if those specific legal tool have been

adopted. This chapter concludes that it is necessary to develop a pollution prevention framework in Peru rather than to rely continue to rely on the establishment of maximum permissible levels of pollution.

Chapter Four confronts theory with reality. In an effort to reinforce with real cases what has been theoretically analyzed in the previous chapters, it presents two case studies, Manhattan and Antamina. These cases reveal the lack of an adequate public participation policy and support the conclusion that social and environmental conflicts are a direct consequence of the absence of adequate mining environmental legislation in Peru. This chapter describes the organization of civil society in the Manhattan case, to express economic, social and environmental concerns, imposing a new challenge to the Peruvian mining industry.

Chapter Five summarizes the conclusions of each chapter and, in particular, of the case studies of Chapter Four, enumerating the lessons of these cases for the Peruvian government, the mining environmental authorities, the mining companies attempting to invest in Peru, and the local communities and indigenous peoples. The main conclusion is the need to implement a reform of Peruvian mining environmental legislation, aiming to take away the decision-power regarding environmental protection from mining companies.

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Introduction

The main purpose of this thesis is to recommend a reform of Peruvian mining environmental legislation. The aim of this law reform should be to take away the decision-power regarding environmental protection from mining companies.

In the subsequent paragraphs of this introduction and in the subsequent chapters of this thesis, significant attention will be paid to the concept of sustainable development. Sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs.¹ Peeling indicated at the Sullivan Roundtable “Mining can contribute to sustainable development in an important way - by proactively working with the community and others to ensure that mining leaves a positive legacy, including a viable, self-sustaining community”.² Peeling added “... sustainable development for the mining industry has come to be defined increasingly in terms of a balance of environmental, social and economic objectives reached through agreements with others”.³ As can be noticed, sustainable development is as much about economic development as about environmental protection. When these two factors are combined it is undeniable that the different stakeholders - government, mining companies, local communities and non-governmental organizations - have different perceptions and expectations that will be analyzed in the present thesis.

The right that Peru has to develop and to promote its economy is unquestionable, but in

¹ Maurice Sunkin, David Ong & Robert Wight, *Sourcebook on environmental law* (London: Cavendish Publishing Limited, 2002) at 46.

² Gordon Peeling (President and Chief Executive Officer Mining Association of Canada) “Sullivan Roundtable: The Role of Industry Associations. Session Three: Planning and building a Mine” (2001), online <www.mining.ca/english/publications/kimberley.pdf> (date accessed: 20 November 2003) at 3.

³ *Ibid* at 4.

the process, the Peruvian government must also consider ways to improve the quality of life of its citizens and to protect their environment. Unfortunately, Peruvian environmental legislation is inadequate and does not promote sustainable development. The present thesis emphasizes that all mining business ventures in Peru should be undertaken pursuant to standards based on legislation aimed at preserving and restoring environmental quality.

My interest in investigating the need to upgrade Peruvian environmental mining legislation started during my eight years working as a tax attorney mainly for the mining industry in Peru, advising companies with Peruvian and foreign shareholders. During that phase of my professional life, I noticed that foreign investors are usually more conscious about protecting the environment. Notwithstanding the degree of environmental consciousness of a particular foreign investor, they usually exceed what Peruvian environmental law requires. However, exceeding Peruvian environmental requirements does not always result in pollution prevention or in promoting sustainable development.

There have been cases in which foreign multinational mining corporations faced environmental protests even though they were applying or considering applying higher environmental standards than those required by the Peruvian legislation. For instance, Manhattan Mining Corporation, a Canadian mining corporation attempting to invest in Peru, has been facing domestic and international protests against its mining project. The protests are based on the environmental damage that the project would cause if the mining company does not improve the Environmental Baseline Study released to the public and the Peruvian mining authorities in July 2000. It is relevant to mention that even though the mentioned baseline study fulfilled most of the Peruvian environmental requirements there were significant questions regarding threats to soil and water quality in the agricultural area where Manhattan Mineral Corporation is attempting to invest.

The communities around the area of influence of the future mine organized a municipal consultation in which 93 % of the 27,015 residents who voted responded “no” to the question: “Do you agree with the development of mining activities in the urban area, urban expansion areas and agricultural zones in the District of Tambogrande?” The municipal consultation is the first of its kind in Peru, immediately following ten years of semi-dictatorial government by Alberto Fujimori. In response to this situation, the directors of Manhattan Mining Corporation reviewed the Environmental Baseline Study and presented an EIA in December 2002. According to the mining company, the EIA not only complies with standards set in Peru but also with those prevailing in Canada and those set by the World Bank, including an important provision for public consultation. However, the same independent consultant that issued a report about the baseline study has stated that the EIA is totally inadequate. The case, which is being debated in Peru, is presented, analyzed and discussed in the fourth chapter of this thesis.

The social and environmental conflict that arose in the case mentioned above is a consequence of the absence of adequate environmental legislation in Peru. This presents the following question: Should the environmental decision-making process of mining corporations consider only the domestic laws of the country where they are investing or should it also follow international environmental standards? The research done for this thesis has led me to the conclusion that the environmental decision-making process of mining companies must not be based simply on compliance with the domestic laws of the country receiving the investment. Economists, environmentalists, lawyers, policymakers and the community support this opinion. Without doubt, the environmental decision-making process must be in accordance with international standards related to sustainable development.

Also according to my experience, most of the Peruvian mining investors simply comply with what is required by the Peruvian mining authorities. This situation results in the degradation of the environment and in the dissatisfaction of the local communities.

Moreover, most of the Peruvian mine sites were run by government-owned companies during a period of lack of environmental laws. This resulted in high levels of pollution. The previously government-owned mining companies were incorporated in the privatization process initiated by the Fujimori administration and are now managed, in most of the cases, by multinational mining corporations or by joint ventures of Peruvian mining companies and multinational mining corporations.

The privatization of government-owned companies initiated by the Fujimori Administration was said to be based on solid economic principles and was touted as an effective tool to promote the enhancement of the Peruvian economy and the enhancement of the quality of life of Peruvian citizens. However, the Fujimori administration turned out to be the most corrupt in the history of Peru; in fact, Alberto Fujimori fled to Japan and is facing charges in Peru ranging from corruption to murder. Therefore, the effectiveness of the privatization process itself cannot be measured because the income generated during the process was not necessarily utilized to enhance the Peruvian economy.

Mining has historically played a central role in the Peruvian economy as a main provider of foreign exchange. Peru is currently one of the major mining producers in Latin America and in the world, and has the geological potential to continue improving its position as a producer of mining products. Peru is the world's fifth largest producer of copper. It is also the world's second largest producer of silver, third largest producer of zinc, tin and lead, and eighth largest producer of gold. At present, the Peruvian mining industry is becoming more international and that has created a growing interaction between multinational mining corporations and Peruvian citizens, especially the indigenous peoples in the areas surrounding the mine sites.

Despite possessing a wealth of significant mineral resources, Peru lacks sufficient financial means for the exploration and exploitation of those resources. Since Peru

requires foreign investment to generate capital and jobs, it has to compete with the other countries in the South American region to attract foreign investors.

If the principle of sovereignty of States is strictly applied, Peru has the right to apply its own legislation to the exploration and exploitation of any natural resource. In view of the fact that environmental protection laws are part of each country's national laws, we could conclude that Peru has the right to apply its own environmental laws, making it attractive to foreign investment, without considering the impact of those laws on the regional and global environment. However, it is irrefutable that the exploration and exploitation of natural resources affects the water, soil, air, ecosystems, wildlife, health, noise, the way of life of indigenous peoples, among other factors, not only in Peru, but also in the entire region.

The concept of sovereignty that each country has over its natural resources should not have greater value than the concept of sustainable development. In this regard Birnie & Boyle indicate, "The most potentially far-reaching aspect of sustainable development is that for the first time it makes a state's management of its own domestic environment a matter of international concern in a systematic way".⁴ Unfortunately, individual governments in their domestic legislation have not necessarily incorporated this concern and a number of international documents and treaties are trying to reduce the gap between sustainable development and sovereignty considering the potential trans-boundary effects of certain activities.⁵

⁴ Patricia Birnie & Alan Boyle, *International Law & the Environment*. Second Edition, (Oxford: Oxford University Press, 2002) at 85.

⁵ Further information can be found in chapter 2 "International Standards".

In addition, international law, environmental law and mining law are not contrary to one another, there is a common ground in the field of environmental preservation and promotion of sustainable development. In consequence, there are new trends of international law affecting the Peruvian and world mining industry.

Environmental protection is a new concern in Peru. The *Peruvian Constitution of 1979* (the country's eleventh since independence in 1821) included for the first time the right to inhabit a healthy and ecologically balanced environment. The *Environmental and Natural Resources Code* was issued in 1990 and constitutes the first environmental framework in Peru. The first *Regulation for Environmental Protection in Mining Activity* was issued in 1993. Even though amendments to mining environmental laws have included more protective requirements in the last few years, especially through the requirement of Environmental Impact Assessments – EIA (*Estudio de Impacto Ambiental*), and the Environmental Adjustment Program – PAMA (*Programa de Adecuacion al Medio Ambiente*), current standards do not provide enough protection for the environment and do not promote sustainable development either.

In my opinion, it is urgent to improve environmental laws applicable to the mining industry in Peru. The present thesis provides a general overview of the mining industry in Peru, describing the historic participation of the government, domestic and foreign mining companies, non-governmental organizations and communities and indigenous peoples. It also analyzes the international environmental principles contained in the international agreements and documents to which Peru has become a party and evaluates the existing Peruvian mining legislation.

The highlight of this thesis is the description and analysis of two case studies in which the conclusions and lessons learned reinforce the necessity to improve the Peruvian environmental legislation. The first case is that of a Canadian mining company

attempting to invest in Peru, and the second case is that of a Canadian mining company currently investing in Peru.

Chapter 1 General information

This first chapter presents general information on mining activity in Peru, explaining the characteristics and peculiarities that have contributed to the development of its current mining industry. To this end, the information provided considers the specific domestic social and political aspects and the international context, focusing on Latin America.

The intention of this chapter is to provide information about mining activity in Peru and the participation of the government, mining companies, non-governmental organizations dealing with environmental issues, and communities and indigenous peoples affected by mining development.

Thus, this chapter outlines the efforts of the Peruvian government to attract foreign investment utilizing different economic and legal tools such as the privatization of government-owned companies, liberalization of the market, fiscal contraction and modernization of the legal framework. For such purpose, the present chapter presents a brief history and some characteristics of the privatization process in Latin America that has taken place in order to achieve macroeconomic stabilization and improvement of efficiency. It also explains in detail the privatization process of government-owned mining companies in Peru. Special attention is given to Canadian investment in Peruvian mining companies.

An enumeration of the new trends that the Peruvian and the world mining industry are facing, pointing out some specific Peruvian circumstances, are contained in this chapter, and an evaluation of the environmental impacts of mining in Peru in the past, and the future challenges for the Peruvian mineral resource industry are presented as well.

1. Peru: a mining country

Peru is well known for its immense natural wealth and its long mining tradition. Since the era of the pre-Colombian cultures and the era of the Inca Empire in South America, mining has been an important activity among people in Peruvian territory. The coast and highlands in the north and the highlands in the south of Peru were and remain wealthy in silver, tin, lead, zinc, copper and gold. When the Spanish conquerors ventured into South American territory, they were looking for El Dorado, which they thought was an empire where the walls of the palace were covered in gold. Since the conquest, mining has been an important sector of the Peruvian economy.

In fact, mining has played a central role in the Peruvian economy as a main provider of foreign exchange. In average it has accounted for between 45 and 50 % of total exports and its share of gross domestic product has ranged between 9 and 10 % over the past two decades.⁶ At present Peru is the world's fifth largest copper producer. It is also the world's second largest silver producer, third largest producer of zinc, tin and lead, and eighth largest producer of gold. The following chart shows Peru as a world-mining leader:⁷

⁶ Alfredo Nunez – Barriga & Isabel Hurtado, Environmental management in a heterogeneous mining industry: The Case of Peru, Mining and the environment: case studies from the Americas, ed by. Alyson Warhust (1999) Ottawa, International Development Research Center. 138.

⁷ Jaime Quijandria (formerly Ministry of Energy and Mines of the Republic of Peru), "PERU: a mining country - New opportunities in familiar places" (2003) online <[http://www.mem.gob.pe/wmem/inversion/sm/exposiciones/PDAC2003\(English\).ppt](http://www.mem.gob.pe/wmem/inversion/sm/exposiciones/PDAC2003(English).ppt)> (date accessed: 31 May 2003).

Table 1 Peru International Mining Ranking

Metal	World	Latin America
Silver	2 nd	2 nd
Tin	3 rd	1 st
Lead	3 rd	1 st
Zinc	3 rd	1 st
Copper	5 th	2 nd
Gold	8 th	1 st

Source: Ministry of Energy and Mines

Thus, Peru is one of the major mining producers in Latin America and in the world, and has the geological potential to continue improving its position as a mining producer.⁸

2. Peru and new trends in international mining environmental laws

Peru, like other countries with a significant mineral resources industry, is facing the international challenge to achieve sustainable development in the mining sector. The mineral resources industry has entered into a new era and is facing changes that will dramatically influence its opportunities and success in the future years. The changes can be seen in different areas: consumer demand, political restructuring, economic transformations, social and cultural developments, change in public attitude about the mining industry and the emergence of the principle of sustainable development in the

⁸ Direccion General de Minería, "Peru: a country rich in natural resources", Ministerio de Energia y Minas de Peru (2003), online: Ministerio de Energia y Minas. <<http://www.mem.gob.pe/wmen/inversion/sm/paisminero/SO2.htm>> (date accessed 2 June 2003).

mining sector.⁹

Some of the new trends in international environmental law affecting the minerals industry that countries with a significant mining industry such as Peru have to face are related to international issues; for instance, every phase of the mining process is being subjected to increasing levels of government regulation. Additionally, the current existing regulations are changing and becoming stricter. In most cases, the mining industry standards, technology and best practices are being adopted from international laws and standards. Some others are related to sustainable development that continues to evolve as the new standard for regulating the mining industry. Government organizations and non-governmental organizations are including sustainable development in their planning, budgets and programs. International financial organizations are considering sustainable development and introducing environmental requirements on their loans. Without doubt, international environmental law, which is also changing and becoming stricter, is increasingly affecting the mining industry both directly and indirectly.¹⁰

In addition, multinational approaches to environmental issues are increasing and nations are being more flexible in the application of the principle of national sovereignty over natural resources by becoming parties of international treaties and agreements. In fact, the prohibition of transboundary pollution is incorporated into international treaties and agreements.¹¹

Other new trends are related to the mining corporation's operations. A threat of retroactive liability is affecting the mining industry and is an increasing worry of mining operators. Therefore, weak or non-existent compliance with the implementation of

⁹ George Pring, James Otto & Koh Naito "Trends in International Law affecting the minerals industry, Part I", (1999) 17/1 Journal of Energy and Natural Resources Law. 40.

¹⁰ *Ibid.* at 41-42.

¹¹ *Ibid.*

international environmental standards cannot be counted as a safe way to avoid liability in the future. In response, the mineral industry is itself expanding international environmental laws by adopting self-governing codes of conducts, best practices, guidelines and intra-company rules.¹²

Civil society concerns are also changing and imposing new challenges to the mining industry. The public participation of individuals and non-governmental organizations is expanding worldwide. The rights of indigenous peoples and local communities are increasingly being recognized, and the participation of indigenous peoples in the decision-making process of mining projects and in the distribution of fiscal revenues is increasing as well. In addition, consumer environmental awareness is growing worldwide demanding more legal controls for environmentally friendly products.¹³

An additional important trend that should drive the mineral resource industry into a new regulatory era, especially in developing countries, is the importation of higher environmental standards by foreign mining corporations. These corporations are not limited in their decision-making process to consider the lower environmental standards in force in the country in which they are investing.

In fact, in Peru, the environmental trends described above are influencing the views of the communities in the zones of influence of the mine sites. Moreover, communities around a mine site in which operators have not incorporated higher standards have engaged in riots and protests against the mining company even though the EIA is fulfilling the Peruvian legal requirements to operate. (This case will be described and analyzed in chapter 4).

¹² *Ibid.*

¹³ *Ibid.*

In consequence, multinational mining corporations must promote sustainable development. As Pring, Otto and Naito note:

Because international environmental regulation is here to stay and bound to become more widely adopted, more stringent, and better enforced, the winners in the minerals markets will not be those that avoid environmental control (only later to be enforced to internalize the high cost of having done so), but will be those that were ahead of the game, those that played a role in changing the industry's production parameters, and those that use their innovative capabilities to their competitive advantages.¹⁴

3. Privatization of government-owned companies in Latin America and privatization of government-owned mining companies in Peru

The privatization of telephone companies, airlines, electric power companies, mining companies, banks and many other types of companies took place on a massive scale in Latin America during the second half of the 1980s and the 1990s. For instance, starting in 1989, a wide range of government-owned companies were privatized in Argentina, including major utilities such as telecommunications, electricity, water, gas, air and rail transport companies.¹⁵ Bolivia privatized the principal utilities such as electricity, telecommunications, transport, water, and oil and gas.¹⁶ In Mexico there was a large scale privatization of government-owned companies in a wide range of industries

¹⁴ *Ibid* at 39.

¹⁵ David McKenzie & Dilip Mookherjee, "Distributive impact of privatization in Latin America: An overview of evidence from four countries" (2001), online: Inter American Development Bank www.bu.edu/econ/ied/seminars/pdf/mookherjeedpw11-7-02.pdf (date accessed: 30 June 2003).

¹⁶ *Ibid*.

covering mining, manufacturing and services.¹⁷ On the other hand, Nicaragua experienced a qualitatively different process of privatization, involving transition from a socialist, war-torn economy. The first phase covered farming, fishing, forestry, mining construction and tourism industry and the second phase commenced in 1995, and is still ongoing and includes utilities such as telecommunications and electricity.¹⁸

This privatization process produced an unprecedented surge in private sector investment and growth during both decades. It has attracted billions of dollars of foreign investment into the region and recovered millions of dollars of capital that was taken out of the region during the economic depression of the early 1980s.¹⁹ In general, privatization offered the opportunity to Latin American companies to attract new investors, new capital, new technology and new management skills, as well as the chance to become integrated into the world economy. However, four aspects of policy and institutional structure have presented challenges to Latin American countries in relation to privatized companies and sectors. First, designing and implementing a regulatory environment to deal with the monopoly power that existed in certain sectors such as telecommunications and electric power production. Second, designing and implementing a regulatory structure that goes beyond the sale of assets and incorporates supervision over the sector (to avoid the continuity of monopoly). Third, the challenge of dealing with local economic groups that in several cases have joint ventures with foreign partners to buy the privatizing company. Fourth, the new challenge of dealing with foreign investors because in Latin America, during the last 30 years, there was a general opinion against foreign ownership and control of industries, especially in public utilities and services.²⁰

¹⁷ *Ibid.*

¹⁸ *Ibid.*

¹⁹ Robert Goose, *Moving beyond privatization in Latin America: The government/business relationship* (Miami: University of Miami, 2000) at 1.

²⁰ *Ibid* at 2.

This last factor has been particularly significant in recent years. In Cochabamba, Bolivia, mass protests against privatization occurred in April 2000. Similar protests have taken place in Ecuador and Paraguay. Water privatization had to be cancelled in Rio de Janeiro, Brazil, because of popular opposition. Street protests by anti-globalization activists have included privatization as a prime target, arguing that national values should not be overtaken by the market.²¹ Nonetheless, the privatization process continues in Latin America, and governments are still looking forward to attracting foreign investors to purchase the companies offered.

The situation in Peru reflects the same major trends prevailing in the rest of Latin America. In the 1960s, the Peruvian Government began to expand its participation in productive activities claiming the existence of strategic sectors that could not fall into private hands because it would endanger national security. With this logic, the participation of public companies expressed as GNP sales value went from 1.5 per cent in 1968 to 16.0 percent in 1987. By the end of 1998, this ratio was approximately 5.0 per cent.²² After over twenty years of absence of direct private investment (foreign or domestic) in all the activities of the Peruvian economy and a strong presence of government-owned companies, the situation changed dramatically in 1990.

When Alberto Fujimori started his first period of government in 1990,²³ there was a strong need to jump-start the economy and to generate productive employment. The Fujimori administration introduced amendments to Peruvian legislation. The goal was to create an adequate legal framework for foreign investment, intended to strengthen the

²¹ *Supra* note 15.

²² Rosendo Paliza, "Impact of privatization in Peru" (1999) online: Sociedad Nacional de Minería Petróleo y Energía <www.snmpe.org.pe/webapp/snmpe/snmpe/english/publications.htm> (date accessed: 30 June 2003).

²³ Alberto Fujimori, the controversial President of the Republic of Peru, was elected for three consecutive periods, the third one with doubts about the constitutionality of the election. He resigned the presidency in September 2000 during a presidential trip.

respect, guarantee and protection of investment. As a result of those amendments, the investment legal framework for mining companies in Peru incorporated the possibility for mining companies of entering into tax stability agreements with the government (with terms of 10 to 15 years for mining companies with sizable mining operations). It also indicated that investment in public services infrastructure is deductible from taxable income. Freedom to make remittances of profits, dividends and financial resources abroad and freedom to dispose of foreign currency and to sell mining products on the domestic and foreign markets was also included. Additionally, the refund of the value added tax, and the Municipal Promotion Tax paid on certain goods and services destined to exploration activities were included as a special benefit for exploration companies.²⁴

The climate for establishment of foreign private investment was also encouraged by the results of national pacification, in the domestic field with the imprisonment of the leaders of the Maoists groups Sendero Luminoso (Shining Path) and Movimiento Revolucionario Tupac Amaru (Tupac Amaru Revolutionary Movement); and, in the international field, with the Peace Agreement concluded with neighbouring Ecuador.

The Fujimori administration initiated structural reforms in the Peruvian economy as well; the privatization of government-owned companies was one of the most important of his announcements. One of the several government reports of the privatization process states:

²⁴ *Supra* note 7.

The object of structural reforms that began in 1990 was to lay the foundations for sustainable economic growth led by the thrust of private initiative. With this in mind, it was fundamental to adopt measures that would allow the existence of a price system with the fewest possible distortions, so that the markets of goods and productive factors (labor and capital) could channel limited resources towards more productive opportunities. Likewise, an essential condition was to stabilize the economy, which in turn required achieving fiscal balance as soon as possible.

The privatization of public companies was structured within the framework of this process to reform the economy. Through which, the State restructures its role as producer of goods and private services, and strengthens its role as supplier of basic services such as health, education, justice, security and basic infrastructure.²⁵

Thus, the Peruvian government initiated a global campaign to present Peru as a good opportunity for foreign investment and as Paliza notes, the results were the following:

Between 1991 and 1998 over 180 privatizations took place at a value of US\$ 7 720 million, which generated investment projects for US\$ 7 935 million. During the same period, the Public Treasury obtained revenues in the amount of US\$ 6 138 million in cash and US\$ 219 million in debt papers at market value, equivalent to a par value of US\$ 343 million. These privatizations include the transfer of about 80 companies, some of which were formed from operative units of major companies such as Electrolima, Petroperú, Centromin, Minero Perú, Electroperú and Pescaperú.²⁶

As a result of the sale of government-owned assets, various mining projects are presently being executed and a large number of prospects are undergoing exploration.²⁷

In consequence, Peru finished the last century selling most of the government-owned companies offered in the privatization process. In the Latin American context, due to the negative financial events in Argentina, the political instability in Venezuela and Brazil and the war in Colombia, Peru stands out because of its relative macroeconomic stability.

²⁵ *Supra* note 22.

²⁶ *Ibid.*

²⁷ *Supra* note 5.

However, the Peruvian privatization process has also faced protests. The worst of its problems occurred in 2000, a few months after the beginning of the Toledo administration. After the privatization and purchase of electricity companies Egasa and Egesur, the government announced the review of the agreements due to the protest and riots conducted by citizens of Arequipa and Tacna against the privatization of these companies. A negative precedent was established and the privatization schedule is now delayed and pending privatization will probably be postponed. Nonetheless, Peru still has properties with considerable geological potential that are scheduled to be transferred to the private sector in 2003 and the authorities in the mine sector are optimistic.²⁸

Without doubt, the privatization of mining state sector and the liberalization of the economy in Peru mainly associated with the reception of foreign investment and joint ventures of domestic and multinational mining companies have provided new opportunities to the Peruvian government. The aim should be to reach both competitiveness in the production of metals and environmentally best practices in the production of such metals.

4. Foreign mining investment in Peru

In 1990, the Peruvian government began a strong campaign to attract foreign mining investors to purchase the projects offered in the privatization process, and to promote the exploration and exploitation of private mine sites. This campaign found support in the international financial markets that conveniently increased foreign investment in the mining sector in the 1990s. As De Echave and Mosquera note, "While between 1990 and 1993, there were new mining projects and expansion in 105 countries, in 1994 alone,

²⁸ *Ibid.*

there was new investment in 151 different countries”²⁹ several of them in South America. In the case of North American investors, the growing production costs, high land costs and stringent environmental laws in Canada and the United States began to reduce the allure of these countries for new investment.³⁰

Three main factors have contributed to attract foreign investors to Peru. First, the aforementioned implementation and execution of a legal framework that intended to strengthen the respect, guarantee and protection of private investments. Second, the pacification of Peru with the aforementioned settlement of domestic and international disputes. A third unfortunate factor is the minimal interest of the Peruvian mining authorities in correcting environmental problems generated by government-owned and private mines in the past. However, this third factor can also be considering as a deterrent for foreign investors, who might be concerned about the possibility of future imposition of retroactive liabilities in the environmental legal framework of Peru.

In any event, the efforts of the Peruvian government appear to be successful. According to the 2002/2003 Annual Survey of Mining Companies conducted by The Fraser Institute, Peru is the world’s fifth most attractive country for mining investment. The following chart compares the investment attractiveness index among various mining regions in the world.

²⁹ Jose de Echave & Cesar Mosquera, “Reactivation of the mining in the South and Behavior of Canadian Companies in Peru: a community consultation” (1996), online: Environmental Mining Council of B.C. <www.moles.org/ProjectUnderground/drillbits/5_11/1.html> (date accessed: 4 June 2003).

³⁰ *Ibid.*

Table 2 Peru: Investment Attractiveness Index ³¹

Source: The Fraser Institute Annual Survey of Mining Companies 2002/2003

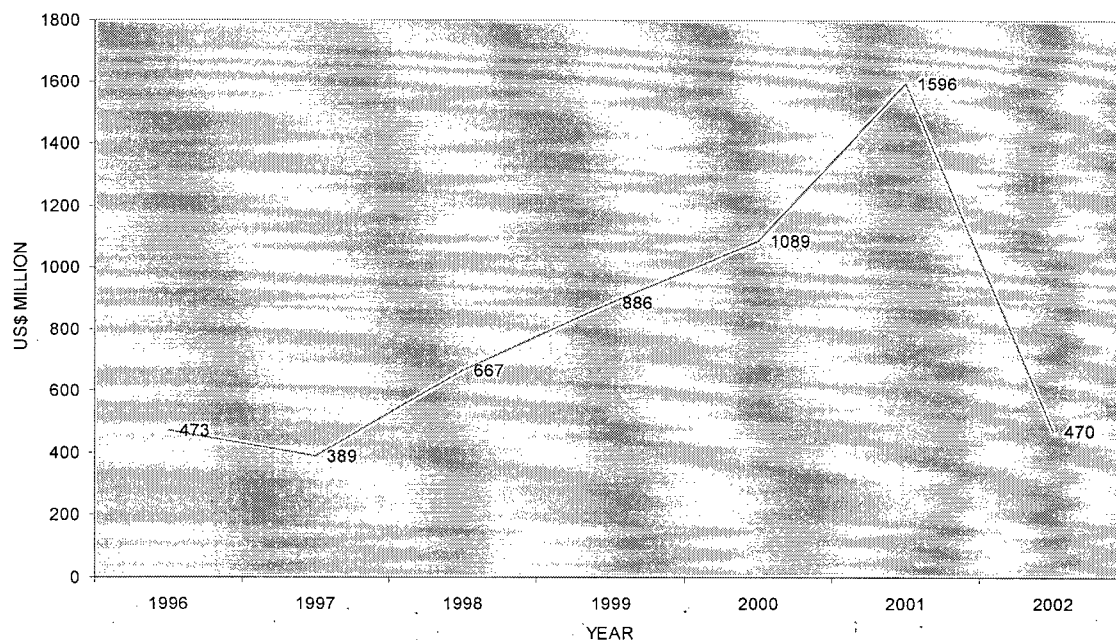
Compared to the 2001/2002 survey, Peru has climbed three positions in the world ranking. This result is considered by the Ministry of Energy and Mines of Peru as a clear and objective proof of Peru's mining significance and of its attractiveness to the world's mining sector.

Another source is the statistics of the Minister of Energy and Mines of Peru which states that between 1996 and 2002 the private investment in Peru's mining sector exceeded US\$5.5 billion. According to this source the investment dropped in 2002 compared to 2001. They attributed this decline to a number of factors: first, the conclusion of the construction of the Antamina mega project, in which an investment of approximately US\$2.1 billion was made from 1996 to 2001; second, the drop in base minerals prices;

³¹ *Supra* note 7.

and, third the constraints in investment budgets throughout the world.³²

Table 3 Investment evolution of mining in Peru³³



Source: Ministry of Energy and Mines of Peru (MEM)

Some of the most important international mining companies currently investing in Peru are AngloGold, Anglo American, Barrick, BHP Billinton, Cambior, CVRD, Doe Run, Grupo Mexico, Mitsubishi, Newmont, Noranda, Pan American Silver, Penoles, Phelps Dodge, Placer Dome, RTZ, Teck Cominco and Shougang.³⁴

A number of these companies are Canadian. This has not always been the case, as De Echave and Mosquera note: “Traditionally, Canadian investment has not been significant

³² *Ibid.*

³³ *Ibid.*

³⁴ *Supra* note 8.

in the Peruvian economy. Over the decade of the eighties, this investment placed Canada in fifth place, and accounted for no more than 3.7 % of the average direct foreign investment in the country”.³⁵

Table 4 Peru: rank of direct foreign investment by country of origin³⁶

	Rank			Percentage of participation		
	1980	1984	1988	1980	1984	1988
US	1	1	1	55.89	50.28	48.81
Panama	2	2	2	8.01	9.22	11.34
Switzerland	3	3	3	6.02	6.58	6.31
Japan	4	4	4	3.53	4.35	4.49
Canada	5	5	5	3.41	3.71	4.12
UK	6	6	6	3.40	3.41	3.25

Source: Comision Nacional de Inversiones y Tecnologias Extranjeras (National Commission of Technology and Foreign Investment) – CONITE

However, Canadian investment changed dramatically and started being an important source of foreign capital for the Peruvian economy in 1995, as reflected in the following table:

³⁵ *Supra* note 29.

³⁶ *Ibid.*

Table 5 Canada, amount of Registered Investment, 1990 – 1996 ³⁷

Year	Amount in US\$	% Change
1990	49 140 725.25	0.02
1991	53 152 756.29	8.14
1992	34 756 814.86	(34.60)
1993	34 767 830.27	0.03
1994	35 004 269.75	0.68
1995	104 771 453.86	199.31

Source: CONITE

Unfortunately, the source of the previous chart does not provide the same kind of statistical information for the following years; however, from 1996 until 2001 the Peruvian mining sector has received important investments from Canada through Noranda and Teck Cominco in the developing and initial production phases of Antamina project.

Canadian mining companies were involved in nearly all the cases of privatization in the mining sector in Peru. Moreover, multinational Canadian mining corporations purchased the most important operative units of Centromin and Minero Peru. For instance, Cominco Ltd (82%) and the Japanese company Marubeni (17%) purchased the Zinc Refinery of Cajamarquilla in November 1994. La Granja, located in the department of Cajamarca, was acquired by Cambior Inc. in March 1994; both, Cajamarquilla and La Granja were operative units of Minero Peru. Inmet Mining Corp. and Rio Algom Ltd. acquired the most important operative unit of Centromin, Antamina, in July 1996.³⁸

³⁷ *Supra* note 29.

³⁸ *Supra* note 22.

The Canadian mining companies presently investing in Peru are Barrick, producing gold, Cambior, exploring copper, and Noranda and Teck Cominco, producing copper and zinc.³⁹ In addition, there is Manhattan Minerals Corporation, a Canadian mining company attempting to invest in Peru to produce copper and gold. (The environmental behavior of this company will be presented in Chapter 4 as one of the two case studies of this thesis).

While multinational Canadian mining corporations are new actors on the Peruvian stage, the information provided above makes clear that Canadian companies have attained an important presence in Peruvian mining.

5. The environmental impacts of mining activity in Peru

There are two well-known facts about mining. First, mining is essential for modern civilization; second, mining disturbs the environment. Mining activity produces waste products and causes ecological disruption, which may generate potential environmental hazards at each stage of the metal production process. For instance, the production of a ton of copper can generate five hundred tons of waste in a surface mine, depending on the grade of the ore and the amount of overburden removed.⁴⁰ If we take in consideration that Peru is the fifth largest producer of copper in the world and the third largest producer of copper in Latin America and that most of its mines are open pit, the possibilities of generating environmental hazards and pollution of water, air and land in Peruvian territory are significant.

³⁹ *Supra* note 7.

⁴⁰ John E. Tilton, *Mining waste and the polluter pays principle in the United States, Mining and the environment: international perspectives on public policy*, ed. by Roderick G. Eggert (Washington DC: Resources for the Future, 1994) at 57.

As noted previously, the mining sector has traditionally played a key role in the Peruvian economy; unfortunately, the mining sector has also been a major contributor to environmental degradation in Peru in the last century.⁴¹ Certainly, in the past, the government-owned mining companies and the private companies operated by domestic investors in Peru were characterized by the use of obsolete technology and low environmental standards, which have contributed to worse pollution. A sad and embarrassing case is Empresa Minera del Centro del Peru S.A, (Centromin) a government-owned mine that produced high levels of pollution in the northern central part of Peru. It is estimated that the pollution costs from Centromin Peru S.A. are at least US\$ 500 million.⁴² The privatization of Centromin was a very special case for the Peruvian authorities because of its pollution legacy. The problem was solved by splitting up the operative units of Centromin and by the inclusion of a clause in the agreement protecting the foreign purchaser from liabilities for previous environmental damage. Under such premises, most of the operative units of Centromin were sold to foreign investors. In this regard, Warhust indicates:

In Peru, ... , the legacy of past pollution, particularly from toxic tailings along the river below Centromin's La Oroya and Cerro de Pasco facilities, was preventing the government from selling those enterprises, since the cost of cleaning up rendered the investments uneconomic and unattractive to foreign capital. It was therefore agreed that the investment contract for buying these operations would protect the foreign partner from liability for previous environmental damage.⁴³

Looking to the future of the mining industry in Peru, the ideal scenario for Peruvian

⁴¹ *Supra* note 6 at 137.

⁴² Empresa Minera del Centro del Peru S.A. (2000) online <www.centrominperu.com> (date accessed: 6 November 2002).

⁴³ Alyson Warhust, *The limitations of Environmental Regulation in Mining, Mining and the Environment: International Perspectives on Public Policy*, ed. by Roderick G. Eggert (Washington DC: Resources for the Future, 1994) at 152.

mining authorities and private entrepreneurs will be to find ways to improve the competitiveness of this sector and to improve the environmental behavior of their mining investors, halting the process of environmental degradation caused principally by government-owned companies in the past.

It is the intention of this thesis to propose an improvement in the Peruvian legal framework regarding environmental controls, environmental standards and environmental management systems in the mining industry, considering the new trends that the mineral industry is facing, as discussed previously.⁴⁴ However, it is a premise of this thesis that a proposal to improve environmental regulation alone is not going to solve environmental problems in Peru. It is important to consider that there are social, economic and production efficiency factors (use of adequate technology) that should be combined to achieve adequate environmental performance.

Consequently, the Peruvian environmental laws and technology standards need to be improved and there are four main stakeholders on this process. The first is the Peruvian government that after consolidating a relative stable economic environment now has the urgent mission to implement sustainable development policies for the mining industry. The second set of stakeholders are the foreign mining corporations that might import to Peru responsible mining operations without limiting decision-making process to the low mining standards regulations required currently by the Peruvian environmental legal framework. The third stakeholders are the both national and international organizations that should observe the upgrading process working closely with the communities around the zones of influence of the mines. Finally, the fourth stakeholders are the communities and indigenous peoples affected by the mining operation.

So far, this chapter has referred to two of the mentioned stakeholders, the Peruvian

⁴⁴ Further discussion of the social and economic concerns that should be consider for upgrading the environmental control in a developing country such as Peru will be analyze in Chapters 2 and 3.

government and the foreign investors. The next section describes the participation of the two other stakeholders, non-governmental organizations and communities affected by mining development.

6. Other stakeholders

6.1. Non-governmental organizations

The World Bank defines NGOs as private organizations that pursue activities to relieve suffering, promote the interests of the poor, protect the environment, provide basic social services, or undertake community development. In general, NGOs are non-profit organizations, which are independent from government and depend, completely or partially, on charitable donations and voluntary service.⁴⁵

Over the past decades, NGOs have become more important in the field of international development; since the mid 1970s, the NGOs in both developed and developing countries have experienced exponential growth and it is now estimated that over 15% of total overseas development aid is channeled through NGOs.⁴⁶

NGOs have played a mayor role in promoting sustainable development internationally and in Peru. Campaigning groups have been key tools of inter-governmental negotiations, and with the retreat of States from several public functions and regulatory activities, NGOs have been paying attention to the activities of corporations, many of

⁴⁵ NGO World Bank Criteria, "Categorizing NGOs", online <http://docs.lib.duke.edu/igo/guides/ngo/define.htm> (date accessed: 1 October 2003).

⁴⁶ *Ibid.*

which have important resources and influences.⁴⁷ Mining corporations are not an exception.

The advances in information and communication technology have helped NGOs to focus their attention on the social and environmental impacts of mining business activities. Communications advances, especially the Internet, have helped to create new global communities and bonds between them across State boundaries, and have allowed the media to inform more people about global problems.⁴⁸ Thus, a mining company that misreads local political, cultural and social realities may find itself under intense public scrutiny, not only in the country where it is operating, but in the rest of the world as well. Mining investors also operate with much more of a global perspective than was the case two decades ago. Mining companies operating overseas now find that is imperative to manage more effectively the social, environmental and political risks of its operations.⁴⁹ Recently, because of some international campaigns, some companies have understood that the future of the business not only depends on the increase of the share value, but also on how this increased value is obtained. In respond to this situation, some mining corporations are designing management structures which integrate sustainable development concerns into the decision-making process.

NGOs are typically weaker than the State and mining companies because they do not have the resources and political power that the other two have; for instances, both States and corporations can own large influential media organizations. However, some campaigns promoted by NGOs have forced both the State and the corporations to

⁴⁷ BSDglobal.com, "The rise and role of NGOs in sustainable development", online <www.bsdglobal.com/ngo/roles.asp> (date accessed: 1 October 2003).

⁴⁸ Anup Shah, "Non-governmental organizations on development issues"(2003), online <www.globalissues.org/TradeRelated/Poverty/NGOs.asp?Print=True> (date accessed: 1 October 2003).

⁴⁹ Tony Breuer & Cynthia Farrel, "Collaboration between NGOs and the mining industry in the third world", online <www.partners.ca/documents/minespac.pdf> (date accessed: 1 October 2003).

improve their mining environment performance (see Manhattan case in Chapter 4 where the participation of Oxfam America, the Mineral Policy Center and other NGOs is significant).

Also, in recent years, environmental NGOs are learning that they can be more effective, and their work can have more positive effects, if they work with the actual communities and help them to empower themselves, because working at the grassroots level helps to provide assistance directly at the source avoiding interceptions of corrupt groups or governments.⁵⁰ This experience suggests that NGOs are becoming an important factor for determining the role of the State and mining corporations.

Mining companies and NGOs have generally very different values and missions. However, the new international trends suggest that to achieve its goals, NGOs and mining corporations can also agree with the mining corporations to join efforts and collaborate. Within the NGO community, it is possible to find a full spectrum of attitudes to the mining industry, from the radical anti-mining organizations to those who see a potential partnership and co-operative development. Therefore, whether partnership and cooperation is possible, will depend on a variable number of circumstances.⁵¹

This section refers in particular to two NGOs that are trying to fill the gaps that the Peruvian government does not or cannot fill: The Mineral Policy Center, an international NGO and Cooperaccion, Accion Peruana para el Desarrollo, a Peruvian NGO. These NGOs are working to coordinate international campaigns to improve the mining's industry performance on environment, social, cultural and human right issues in Peru.

⁵⁰ *Supra* note 48.

⁵¹ *Supra* note 49.

6.1.1. Mineral Policy Center

The Mineral Policy Center (MPC) is a non-profit organization dedicated to protected communities and the environment from the destructive impacts of mineral development in the United States, and worldwide.⁵²

The MPC works at two levels: MPC United States and MPC International Campaign. The latter works with partners from around the world to pressure mining companies to adhere to the strictest human rights, labour and environmental principles during operation and closure of mines. It also aims to make mining firms economically accountable for the social and environmental impacts of their operations, ensure that local communities have the right to veto or approve mining projects that would affect them, and promotes sustainable material use practices.⁵³

The MPC International Campaign, in partnership with other domestic and international NGOS, has supported the community of Tambogrande in Peru in the effort to stop mining development in their traditionally agricultural region. MPC, Oxfam America and the Mining Environmental Council of British Columbia commissioned Dr. Robert Moran, an international expert in environments affected by mining operations, to prepare a report of the environmental baseline study of the project. The aim was to support the ability of Tambogrande citizens to be aware of potential impacts of the project on their water, land and livelihoods. (See Manhattan Minerals Corporation case in Chapter 4).

⁵² Mineral Policy Center, protecting communities and the environment, online: Mineral Policy Center home page <www.mineralpolicy.org/> (date accessed: 31 October 2003).

⁵³ *Ibid.*

6.1.2. Cooperaccion

Cooperaccion, Accion Peruana para el Desarrollo (Cooperación) is a Peruvian NGO founded in 1997 with the mission to promote a balance between the exploitation of the natural resources and the needs of sustainable development of the country and the communities. It works in two industries, mining and fisheries.⁵⁴

Cooperaccion pursues its mission through the promotion of the rights of communities, strengthening local capacity, incorporation of environmentally appropriate technologies, and creation of spaces and processes that include the participation of social organizations, local authorities, companies and the State.⁵⁵ Since its founding, Cooperaccion has conducted national campaigns, and been a partner in international ones, to demand environmental friendly practices from mining companies investing in Peru.

In the field of publications, Cooperaccion has published *Mining and Communities: Oral and Written Testimonies*, a book that describes some of the environmental damages in Peru cause by inappropriate mining development. In this book, one local farmer, who grew up only 300 meters from the smelter at La Oroya (central highlands in Peru), said he lived close enough for the fumes to burn his throat and nose. Another local inhabitant said the last harvest he could remember was in 1919 or 1920, blaming the smelter for ruining agriculture.⁵⁶ “The smoke fell like a snowball of arsenic dust on the land, rocks and pasture. The animals got sick, it was a disaster. How could we live there? There was

⁵⁴ Cooperaccion, mision, vision institucional, online <www.cooperaccion.org.pe/Institucional.htm> (date accessed: 31 October, 2003).

⁵⁵ Cooperaccion, “Mineria y Comunidades en Peru y Canada”, online <<http://emcbc.miningwatch.org/Peru/english/cooperaccion/>> (date accessed: 31 October, 2003).

⁵⁶ Oxfam America, “Mining in Peru”, online <www.oxfamamerica.org/advocacy/art678.html> (date accessed: 31 October 2003).

no harvest and the animals died, like that, in groups. It as though they were poisoned".⁵⁷ Cooperaccion also prepared in 1996 a paper that summarizes the methodology and results of a community consultation focused on the behavior of Canadian mining companies in Peru.⁵⁸

6.2. Communities and indigenous peoples

Ever since the era of Spanish colonization, communities and indigenous peoples in Peru have suffered the negative effects of mining, while enjoying few of the benefits.

Mining activities have been stepping up in the last 8 years in Peru and the land areas of mining development have increased to over 25% of Peruvian territory.⁵⁹ "Of the estimated 6,000 indigenous communities in Peru, over 50% are affected by mining".⁶⁰

Some of the Peruvian communities and indigenous peoples affected by mining operations in Peru are located in the Andean Highlands, where Quechua-speaking people engage in livestock herding and some farming of potatoes and grains; some other are located in the north west, where previously agriculture was the model of development of the region. The negative effects of mining operations include resettlement, competition for fresh water, contamination of surface and underground water, pollution of air, among others.

As was mentioned, communities and indigenous peoples are increasing their public

⁵⁷ *Ibid.*

⁵⁸ The paper is available online at

[<http://emcbc.miningwatch.org/Peru/english/community_study.htm>](http://emcbc.miningwatch.org/Peru/english/community_study.htm)

⁵⁹ *Supra* note 56.

⁶⁰ *Ibid.*

participation and are becoming more aware about the way the operation will affect them. Peruvian communities are not an exception. Some of them have been organizing to conduct protests against certain mining projects and also have been receiving financial and technical support from Peruvian and international NGOs to claim their right to participate in the decision-making process of mining development in their region. In addition, a common civil society organization in small and mid-size towns in Peru are Defense Fronts, which have had significant participation demanding better environmental practices from mining companies (see cases in Chapter 4).

Chapter 2 International standards

This chapter contains information about the evolution and development of international environmental documents and treaties, international environmental principles, and international management systems related to environmental protection that had been developed by industry.

The purpose is to analyze the relevance of the treaties, principles, management systems for the mining industry; and, in particular, to determine the presence or absence of the international environmental principles in Peruvian mining and environmental legislation. The purpose is also to determine the influence that international management systems have in the decision-making process of Peruvian mining corporations and/or multinational mining corporations investing in Peru.

In order to analyze the relevance of the international environmental documents and treaties (also called conventions) and the environmental principles, it is necessary to begin this chapter presenting a definition of international environmental law. Birnie and Boyle, indicate “The resolution of international legal problems, however categorized, entails the application of international law as a whole, in an integrated manner. Bearing that in mind, it is worth reemphasizing that ‘international environmental law’ is nothing more, or less, than the application of international law to environmental problems”.⁶¹ International law addresses environmental issues at several levels because some environmental problems, such as climate change, are global and affect all states, not necessarily equally, but at least to the extent that impacts are global and global solutions are required.⁶² It is also important to mention that international law does not allow states

⁶¹ Supra note 4 at 2.

⁶² *Ibid* at 6.

to conduct or permit activities within their territories, or in common spaces, without regard for the rights of other states or for the protection of the environment.⁶³

Thus, the sources of international law enumerated in article 38 of the International Court of Justice are also applicable to international environmental law: international conventions, international custom, the general principles of law, and judicial decisions and the teachings of the most highly qualify publicists.⁶⁴ As was mentioned, this chapter will refer in particular to international environmental treaties and documents, international environmental principles, and will additionally refer briefly to customary law in the case of the precautionary principle.

1. International Environmental Documents and Treaties

This section outlines the importance of some international environmental documents and treaties in the evolution and development of international environmental law.

1.1. Stockholm Declaration on the Human Environment, 1972

The year 1972 is widely regarded as the year of the true beginning of modern international environmental law, with the convening of the first major multilateral gathering on environmental concerns, the United Nations Conference on the Human Environment. "An impressive 114 of the then 131 UN members attended and approved by consensus the Stockholm Declaration".⁶⁵

⁶³ *Ibid* at 104.

⁶⁴ *Statute of International Court of Justice*. Y.B.U.N. 1052, 59 Stat. 1031,(1945) T.S. No.993

⁶⁵ George Pring, James Otto & Koh Naito, "Trends in International Law affecting the minerals industry, Part II" (1999) 17/2 *Journal of Energy and Natural Resources Law*,165.

The Stockholm Declaration is considered soft law that is expressed in inspirational rather than in mandatory terms; however, through its 26 principles the Declaration is intended to be a starting point of international environmental protection.

Prior to Stockholm, developing countries did not favor the idea that cooperation of all countries was necessary to protect the environment. From the perspective of developing countries, the deterioration of the environment was caused by industrial pollutants, a perspective that has not disappeared. Developing countries reiterated at Stockholm that the foremost environmental problem of the world was Third World poverty caused mostly by the exploitive practices of developed nations.⁶⁶ In this sense, the preamble of the declaration states that:

In the developing countries most of the environmental problems are caused by under-development. Millions continue to live far below the minimum levels required for a decent human existence, deprived of adequate food and clothing, shelter and education, health and sanitation. Therefore, the developing countries must direct their efforts to development, bearing in mind their priorities and the need to safeguard and improve the environment. For the same purpose, the industrialized countries should make efforts to reduce the gap between themselves and the developing countries. In the industrialized countries, environmental problems are generally related to industrialization and technological development".⁶⁷

The Stockholm Declaration establishes a link between economic and social development and the environment in Principle 8 by stating that:

Economic and social development is essential for ensuring a favorable living and

⁶⁶ Nina M. Eejima, "Sustainable development and the search for a better environment, a better world: A work in progress", (1999/2000) 18/1 UCLA Journal of Environmental Law and Policy, 116.

⁶⁷ *Stockholm Declaration on the Human Environment*, U.N. Doc. A/CONF.48/14/Rev.1 (1973); (1972), 11 Int. Leg. Mat. 1416. Proclaim 4. [hereinafter UN Conference on the Human Environment].

working environment for man and for creating conditions on earth that are necessary for the improvement of the quality of life.⁶⁸

Further, Principle 11 establishes a link between environmental policies and development:

The environmental policies of all States should enhance and not adversely affect present or future development potential of developing countries ...⁶⁹

Principle 21 is the most pertinent for the environmental mining industry:

States have ... the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States so for areas beyond the limits of national jurisdiction.⁷⁰

This principle recognizes the sovereignty of States over their national resources but at the same time enforces the good neighborliness policy as a fundamental rule of international environmental law.⁷¹

As is evident, the Stockholm Declaration emphasized a strong relation between environment and socio-economic development; however, it did not state how the goals mentioned in the principles could be achieved.

⁶⁸ *Ibid* at Principle 8.

⁶⁹ *Ibid* at Principle 11.

⁷⁰ *Ibid* at Principle 21.

⁷¹ *Supra* note 65 at 165 – 166.

1.2. Rio Declaration on Environment and Development, 1992

In 1992, 20 years after the United Nations Conference on the Human Environment (UNCED), took place in Rio de Janeiro, with the participation of 172 nations, making it the largest international meeting in history held on any issue.⁷² The final purpose of the UNCED was to reconcile environmental and developmental objectives in national and international policymaking.⁷³

Like the Stockholm Conference, the UNCED produced non-legally binding (soft law) instruments including, the Rio Declaration on the Environment and Development (to update the Stockholm Declaration) and Agenda 21. It also produced international law that was legally binding (hard law): the Convention on Biological Diversity (CBD) and the Convention on Climate Change. Some principles of the Rio Declaration relating to the priority to be given to the eradication of poverty and to adopting precautionary measures for environmental protection were incorporated into the CBD and into the Framework Convention on Climate Change.⁷⁴

In the Rio Declaration, Principle 1 recognized, for the first time, a right to development:

Human beings are the center of concern for sustainable development. They are entitled to a healthy and productive life in harmony with nature.⁷⁵

Principles 2, 10, 15, 16, 17, 18, 19 and 22 are the most relevant for mining environmental

⁷² *Ibid* at 166.

⁷³ *Supra* note 66 at 118.

⁷⁴ Mukul Sanwal, "Sustainable development, the Rio Declaration and multilateral cooperation" (1993) 4/1 Colorado Journal of International Environment Law and Policy. 51.

⁷⁵ *Rio Declaration on Environment and Development*, U.N. Doc.A/CONF.151/5/Rev.1; (1992), 31 Int. Leg. Mat. 874. Principle 1 [hereinafter *Rio Declaration*].

concerns. They refer to the following concepts:

- Principle 2 of the Rio Declaration not only repeats Stockholm Principle 21 but also amends it by stipulating that States have a right to exploit their own resources pursuant to their own environmental *and developmental policies*. The addition reflects the recognition that development must not be constrained to international law for the environment.⁷⁶
- Principle 10 supports the increase of public participation in environmental and developmental issues.
- Principle 15 establishes the precautionary approach.
- Principle 16 adopts the polluter pays principle.
- Principle 17 recognizes the preparation of an EIA as a standard practice for proposed projects likely to have a significant adverse environmental impact.
- Principles 18 and 19 state the requirement of timely notification and consultation in cases of transboundary environmental impacts.
- Principle 22 calls for protection of indigenous peoples and local communities and for their effective participation in development.

According to Sanwal, there is consensus that the Rio Declaration achieved a balance between the obligations accepted by the developing countries to prevent further deterioration of the environment and the responsibilities of developed countries for causing the damage.⁷⁷ Another consensus is that in the Rio Declaration the focus was no longer the concern that environmental considerations will restrict the right of States to exploit their natural resources but the impact of sovereignty or restrictions over activities affecting the natural environment.⁷⁸

Thus, the importance of the Rio Declaration lies in its requirement that for

⁷⁶ *Supra* note 74 at 49.

⁷⁷ *Supra* note 74 at 51.

⁷⁸ *Ibid.*

accomplishment of its principles it is necessary to develop international law not only in the field of environment, but also in the field of sustainable development. For such purpose, it should be understood that the future debate would include analysis in different areas such as utilization of economic instruments as incentives or deterrents for environmental practices, transformation of consumer patterns to reduce environmental degradation, and internalization of environmental costs in goods and services.

Agenda 21 was conceived as an action plan for implementing the Rio Declaration principles and, for that purpose, it encourages countries to adopt their own national action plan.

Agenda 21 has 4 sections and 40 chapters. It requires the States not only to adopt new environmental laws but also to commit to significant economic, social and international institutional reforms. The goal for the States is to integrate environmental, economic and social planning to achieve sustainable development and prevent environmental degradation.

The sections and chapters that contain important provisions for mining industry are the following:

- Section II, "Conservation and management of resources for development", that covers chapters 9 to 22. Some of the relevant chapters for mining are: 9 "Protection of the atmosphere"; 10 "Integrated approach to the planning and management of land resources"; 15 "Conservation of biological diversity"; 16 "Protection of the oceans, all kind of seas, including enclosed and semi-enclosed seas, and coastal areas, and the protection of rational use on their living resources"; 18 "Protection of the quality and supply of fresh water resources: application of integrated approaches to the development, management and use of water resources"; 19 "Environmentally sound management of toxic chemicals, including prevention of illegal international traffic in toxic and dangerous products"; and 20 "Environmental sound management

of hazardous wastes”.

- Section III, “Strengthening the role of major groups”, that covers chapters 23 to 32. This section also has two chapters relevant to the mining industry: 26 “Recognition and strengthening the role of indigenous peoples and their communities”; and 27 “Strengthening the role of non – governmental organizations: patterns for sustainable development”.⁷⁹

Having read the chapters of Agenda 21 it can be concluded that, realistically, it is a challenge that may never be implemented by developing countries, because of lack of financial resources. Governments of developing countries are still facing the basic problems of under-development, and implementing the suggestions of Agenda 21 in their domestic laws and policies may not be a priority.

1.3. Convention on Biological Diversity, 1992

The CBD was adopted at the UNCED. As was mentioned, some principles of the Rio Declaration relating to the priority to be given to the eradication of poverty and to adopting precautionary measures for environmental protection were incorporated into the CBD.

The CBD reflects the emergence of a more integrated approach to environment conservation by specifically addressing the conservation of biological resources, their sustainable use, access to genetic resources, and the sharing of benefits derived from the use of genetic material, and access to technology.⁸⁰

⁷⁹ Agenda 21. U.N.Doc.A/CONF.151/26 (1992) [hereinafter Agenda 21]

⁸⁰ *Supra* note 66 at 122.

According to article 2 of the CBD, “Use of terms”,

“Biological diversity” means the variability among living organism from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.⁸¹

The preamble reaffirms that States have sovereign rights over their own biological resources. It also recognizes the close and traditional dependence on biological resources by many indigenous and local communities embodying traditional lifestyles, and the desirability of sharing equity benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components.⁸²

The articles of the CBD most significant to the mining industry are the following:

- Article 3 “Principle”. Adopts the prevention principle establishing that States have the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.
- Article 7 “Identification and monitoring”. Encourage each State, as far as possible and as appropriate to identify processes and categories of activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biological diversity, and monitor their effects through sampling and others techniques.
- Article 11 “Incentive measures”. Encourages each State, as far as possible and as appropriate to adopt economically and socially sound measures that act as incentives

⁸¹ *Convention on Biological Diversity*, (1992) 31 I.L.M 818. Article 2. [hereinafter CBD]

⁸² *Ibid* at Preamble.

for the conservation and sustainable use of components of biological diversity.

- Article 14 “Impact Assessment and minimizing adverse impacts”. Introduces appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse impacts on biological diversity with the goal of avoiding or minimizing such effects and, where appropriate, allowing for public participation in such procedures.⁸³

Once more, the conclusion is that the lack of financial resources of developing countries to comply with the requirements of the CBD is obvious. Peru is a party of the CBD; however, as it is evaluated in Chapter 3, the environmental mining authorities rely on pollution control rather than in pollution prevention. Peruvian mining authorities are still in the process of understanding the need to introduce amendments to the legislation in order to achieve pollution prevention.

2. International Environmental Principles

The purpose of this section is to examine the evolution and development of the general principles of law related to environmental protection. It is also the intention to analyze the applicability of the environmental principles to the Peruvian mining industry.

It is pertinent to mention that the principles of law have evolved with the growing concern over environmental degradation and the real and potential threats of such degradation for the survival of humankind.⁸⁴ Thus, the importance of the inclusion of the principles in domestic legislation and in international environmental treaties is undeniable.

⁸³ *CBD*, *supra* note 81 at Articles 3, 7, 11, 14, 15, 20.

⁸⁴ *Supra* note 1 at 46.

Generally speaking it can be said that the principles of law related to environmental protection fall into four categories:

- First, those concerned with the relationship between environmental control and the need for socio-economic development: sustainable development.
- Second, those concerned with preventing or reducing pollution: prevention and precautionary approaches.
- Third, those concerned with allocating liability for pollution when it has occurred: polluters pay.
- Fourth, those concerned with the public access and participation in the environmental decision-making process: participation.

This section will examine the principles mentioned in each of the four categories. It will present the definition, the elements that integrate each principle, and the presence or absence of the principles in Peruvian environmental mining laws.

2.1. Sustainable development

In the words of Sunkin, Ong and Wight, “Defined simply, ‘sustainable development’ is the general principle that human development and use of natural resources must take place in sustainable manner”.⁸⁵ Sunkin, Ong and Wight add that “In economic terms, sustainable development can be interpreted ‘as development that lasts’, a path along which the maximization of human well being for today’s generations does not lead to the decline of well being in the future”.⁸⁶ In 1987, the Brundtland Report of the World Commission on Environment and Development, widely accepted as the precursor to the

⁸⁵ *Ibid.*

⁸⁶ Organization for Economic Co-operation and Development, *Principles to enhance sustainable development* (Paris: OECD Publications, 2001) at 10.

UNCED, defined sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs⁸⁷. UNCED identifies five elements as the most important elements of sustainable development: first, emphasis on quality of life rather than on sustained production of commodities; second, a broadened concept integrating pollution and natural resources with the whole natural environment; third, treating the environment as an economic resource; fourth, differentiating between developed and developing countries' responsibilities for global environmental damage and for response measures to potentially damaging activities; and fifth, concern with broader national policies, strategies, and practices.⁸⁸

Additionally, there are four main elements, recognized as principles in themselves, which are present in sustainable development. First, the conservation of natural resources for the beneficial use of future generations, recognized as the principle of inter-generational equity. Second, the exploitation of natural resources in sustainable or prudent manner, recognized as the principle of sustainable use. Third, the equitable use of natural resources, which imply that, the use by one State must take into account the needs of other States, recognized as the principle of equitable use. Finally, fourth, the integration of environmental considerations into economic and other development plans, programs and projects, recognized as the principle of integration of environment and development needs.⁸⁹

Due to all the aforementioned elements and principles that are integrated in the definition of sustainable development, it is broadly recognized as the most important general principle of environmental law and it is been seen as the guiding principle in the

⁸⁷ *Supra* note 1.

⁸⁸ *Supra* note 74 at 45 – 46.

⁸⁹ *Supra* note 1 at 47.

evolution of international environmental law.⁹⁰ As can be seen, sustainable development encompasses legal measures, economic, and policy instruments. These three elements need to be combined in order to stop practices that are detrimental to the environment with devastating repercussions for human beings. Sanwal, in agreement with what was mentioned above, states: "Sustainable development links environmental, technological, and social concerns with the economic decision-making process of the market".⁹¹

In addition, the Organization for Economic Co-operation and Development suggests, "Improving the coherence between economic and environmental policies would contribute to removing those inappropriate incentives that are leading towards unsustainable resource depletion and environmental degradation".⁹² Some of the measures that can be adopted are:

- The use of a price system to encourage individual agents to take the full costs of environmental degradation into account in their decisions.
- The reform of governments' decision-making processes to allow more integrative approaches to the full range of consequences of their policies.
- The use of technological policies to help replace environmental degradation with economic growth.
- The strengthening of the contribution of the international trade and investment systems to sustainable development worldwide.⁹³

On the other hand, the social dimension of sustainable development indicates that a coherent approach is required to address environmental threats in a manner that is consistent with the development and social priorities of different countries. The conflict between environmental protection and economic growth arises in developing countries

⁹⁰ *Supra* note 74 at 48.

⁹¹ *Ibid.*

⁹² *Supra* note 86 at 11.

⁹³ *Ibid.*

where the governments cannot satisfy the fundamental needs of their citizens. The consequences of poverty persist over time in large social sectors of developing countries and spread in the rest of the country in the form of social conflicts and protest, migration and diseases. In conclusion, poverty reduction is necessary to achieve sustainable development worldwide.⁹⁴

In Peru, domestic legislation has introduced sustainable development in its laws and regulations related to environmental protection. The Peruvian Constitution states in the chapter labeled "Environment and Natural Resources" that the State promotes the sustainable development of its natural resources.⁹⁵ The Environmental and Natural Resources Code (ENRC) establishes that the foundations for the design, formulation and implementation of the Peruvian environmental protection policy is the conservation of the environment and the natural resources, to satisfy the necessities of the present and future generations. For such purpose, the government promotes an equilibrium between socio-economic development and the exploitation of natural resources.⁹⁶ The Peruvian Constitution and the ENRC constitute the framework within which all the sectors of the Peruvian economy must adjust their environmental regulations.

Even though some international mining corporations and joint ventures of Peruvian and foreign mining companies have been applying higher environmental international standards than the ones required by the domestic legislation, the described practice is not applied in all the mining operations in Peru, nor in the rest of the industries. The government is still trying to find the best way to promote economic growth and, at the same time, is still dealing with endemic problems such as corruption, poverty, migration and lack of education. Thus, unfortunately, sustainable development is more a theory

⁹⁴ *Supra* note 92 at 16.

⁹⁵ *Peruvian Constitution*, 1993, c. C-V, s. 67.

⁹⁶ *Environmental and Natural Resources Code*, Legislative Decree 613, 1999, s. 1 (1) (date published: 8 September 1990) [hereinafter ENRC]

rather than a reality in Peru.

2.2. Preventive

The preventive principle has a longer history and a greater record of acceptance and implementation by States, and is more precise in terms of its obligatory character than the principle of sustainable development (analyzed above) and the precautionary approach (that will be analyzed below).⁹⁷

De Sadeller indicates that the interaction between environmental prevention and the responsibility not to cause damage to the environment of other States or areas beyond national jurisdiction has been suggested as the origin of the preventive principle.

Several authors consider the Trail Smelter arbitration as the first manifestation of the principle of prevention. In that case the Dominion of Canada was judged liable for damage caused by pollutants discharged into the atmosphere by foundry, on the ground that the government should have ensured that the installation was being operated in conformity with the obligations incumbent upon all States under international law ...⁹⁸

The Trail Smelter Arbitration⁹⁹ recognized the existence of an international rule that obligates States to anticipate transboundary pollution. The Principle was reproduced in Principle 21 of the 1972 Stockholm Declaration of the Human Environment.

States have, in accordance with the Charter of the United Nations and the principles

⁹⁷ *Supra* note 1 at 50.

⁹⁸ Nicolas de Sadeller, *Environmental Principles: From political slogans to legal rules*, trans. Susan Leubuscher (New York: Oxford University Press, 2002) at 62.

⁹⁹ Trail Smelter Arbitration, United States v. Canada, (1931-1941), 3 R.I.A.A. 1905.

of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction of control do not cause damage to the environment of other States of areas beyond the limits of national jurisdiction.¹⁰⁰

Furthermore, Principle 2 of the Rio Declaration establishes that

...States have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.¹⁰¹

The principle can be defined as a requirement that any activity, which does or will cause environmental pollution or damage, is to be prohibited. Therefore, the preventive principle seeks to minimize environmental damage by requiring that action be taken at an early stage of the process, whenever possible before such damage has actually occurred.¹⁰²

Hence, it can be assured that the principle of prevention is an external element of the general obligation of due diligence with respect to the environment and natural wealth and resources.¹⁰³

The clear objective of the preventive principle is to avoid environmental harm and reduce or eliminate the risk of harm. In practice, the main use of the principle is in issuing authorizations that set out the conditions for administrative controls, liabilities, and in some cases criminal offenses. These authorizations use technical specifications to determine methods of operations, quantities and concentration of pollutants that may be

¹⁰⁰ *UN Conference on the Human Environment*, *supra* note 67 at Principle 21.

¹⁰¹ *Rio Declaration*, *supra* note 75 at Principle 2.

¹⁰² *Supra* note 1 at 50.

¹⁰³ *Supra* note 98 at 64.

discharged, and the security measures that the operator must take all the way through out the duration of the permit.¹⁰⁴

It is important to consider that the application of environmental preventive measures should be imposed after a cost – benefit analysis. As is mentioned by De Sadeller, “... before adopting a preventive measure, public authorities should evaluate whether the cost of their action will or not will exceed the cost of the damages that might be avoided”.¹⁰⁵

Without doubt, a great opportunity to apply the preventive principle is the requirement to prepare an EIA. According to Principle 17 of Rio Declaration,

Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment...¹⁰⁶

Chapter 3 will indicate that Peruvian mining environment laws and regulations require the elaboration and approval of an EIA before the mining operation starts. According to the guidelines to prepare the EIA, the proponent of the mining operation should identify the environmental impacts utilizing the most appropriate technology for the type and nature of the project. The EIA should also contain a section that explains the measures to control and mitigate the effects of the activity, but no recommendations for pollution prevention are suggested or required. Thus, unfortunately, Peruvian mining environmental authorities have decided not to be strict in the application of the prevention principle in the EIA.

¹⁰⁴ *Ibid* at 72.

¹⁰⁵ *Ibid* at 81.

¹⁰⁶ *Rio Declaration, supra* note 75 at Principle 17.

2.3. Precautionary

The precautionary principle has a shorter history than the preventive principle. It has only recently appeared in binding international treaty law, as opposed to international instruments of a non-binding character.¹⁰⁷

The precautionary principle constitutes the ultimate consequence of modifications regarding policy measures intended to counter environmental regulations. The first phase was based on remedial action, which unfortunately translates into late intervention by public authorities. A characteristic of the first phase is that the damage has already occurred and the only possible action is remedial. The second phase evolved to include prevention measures, by which public authorities intervene prior to the occurrence of the damage that would take place if nothing is done to avoid it. Finally, the third phase is characterized by the presence of anticipation. The third phase differs from the previous ones in the fact that authorities intervene in cases of potential, uncertain or hypothetical threats to the environment. For precautionary measures the damage has not yet occurred and there is no refutable proof that it will occur.¹⁰⁸

The precautionary principle started appearing in the fields of marine and atmospheric pollution and it reached universal recognition at the UNCED.¹⁰⁹ Principle 15 of the Rio Declaration states:

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason

¹⁰⁷ *Supra* note 1 at 51.

¹⁰⁸ *Supra* note 98 at 95.

¹⁰⁹ *Ibid* at 94 – 97.

for postponing cost-effective measures to prevent environmental degradation.¹¹⁰

The preamble of the CBD also provides that where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such threat.¹¹¹

As can be concluded from the definitions expressed above, the precautionary principle is intimately linked to risk; therefore, it is relevant to examine the scope of the concept of risk that should be present in order to apply precaution measures. In current usage, risk is generally understood as a synonym of danger, peril, or an unfortunate event. Risk is inherently uncertain. The type of risk that is present in the case of precautionary legal measures is the risk that emerges from the post - industrialized era, where scientific development gives rise to new risks in which causation cannot be fully established. In this case, causation is replaced by a relationship of possibility or plausibility between a case and its effect.¹¹² The implementation of the precautionary principle also presents the difficulty that it does not determine the degree of care needed to protect the risk; but the logic suggests that the principle's application will in effect depend on the potential seriousness or damages and their probability.¹¹³

The incorporation of the precautionary principle in international agreements and treaties suggested that the principle might be utilized to overturn the traditional burden of proof, which is weighted in favor of polluters, in the sense that any activity has to be proven to cause pollution before action may be taken to prevent, reduce or control such pollution. Therefore, the precautionary principle would act: to reverse the burden of proof, and to require any potential polluter to ensure that the activity would not cause pollution before

¹¹⁰ *Rio Declaration*, *supra* note 75 at Principle 15

¹¹¹ *Supra* note 98 at 97.

¹¹² *Ibid* at 149 – 161.

¹¹³ *Ibid* at 222.

it is allowed to commence.¹¹⁴

Considering that some environmental pollution caused in the past by the different industries around the world can never be cleaned up, or at least cannot be cleaned up without incurring substantial costs, the need to focus environmental policies on avoiding environmental damage before it occurs is becoming more and more relevant.

In regards to its present formal status in international law, the precautionary principle can be qualified as a general principle of international environmental law and serves as a guideline for the formation of policy and legal instruments in the area.¹¹⁵ Trouwborst indicates that it is also important to mention that the precautionary principle is gaining recognition as customary international law:

... it is not only legally binding for States parties to precautionary treaties that have entered into force, since precautionary practice is of such uniformity and generality, and the evidence of opinion juris sive necessitatis accompanying it of such persuasiveness, as support the conclusion that contemporary customary international law also requires States to apply the precautionary principle.¹¹⁶

There is no reference to the precautionary principle in the Peruvian mining environmental laws. However, in the international stage Peru, along with its neighbor's countries Argentina, Chile, Colombia, Bolivia, Brazil and Ecuador, is a party of the 1992 CBD.¹¹⁷ Thus, even though the CBD is expressed in inspirational rather than in obligatory terms, Peruvian government might want to analyze if the respect of the precautionary approach in the domestic and international context could be mandatory

¹¹⁴ *Supra* note 1 at 51.

¹¹⁵ Arie Trouwborst, *Evolution and status of the precautionary principle in international law* (Netherlands: Kluwer Law International, 2002) at 286.

¹¹⁶ *Ibid.*

¹¹⁷ *CBD, supra* note 81.

according to international customary law. For such analysis, the Peruvian government should keep in mind, among other factors, that the essence for the formation of customary international law, as a general practice accepted by law, is the gradually combining effect of the practice of a number of states with regard to a particular type of legal problem or situation.¹¹⁸

2.4. Polluter pays

The polluter pays principle provides that all human economic activity that causes damage to the environment should be accounted for in the economic pricing system of the goods and services produced by such activity; for economists this process is called the internalization of environmental costs.¹¹⁹

The mentioned environmental costs are called externalities, which can be positive or negative. For instance, farmers living close to a well-maintained forest benefit from reduced erosion and flooding, enjoying positive externalities without paying for them. On the other hand, negative externalities arise when the production or consumption of goods or services damages the environment without that damage being reflected in their price. For instance excessive use of pesticides and fertilizers, and their runoff these into water are not reflected in the price of agricultural products. In this case, consumers benefit for market prices that do not reflect the real cost of the activity. Thus, consumers benefit at the expense of the environment.¹²⁰

In consequence, the polluter pays principle can be defined as an economic rule of cost

¹¹⁸ Lakshamn D. Guruswamy, Sir Geoffrey W.R. Palmer & Burns Carlson, *International Environmental Law and World Order*. Second edition (ST. Paul: West Publishing Co., 1999) at 101.

¹¹⁹ *Supra* note 1 at 54.

¹²⁰ *Ibid* at 21.

allocation based on the theory of externalities. It requires the polluter to take responsibility for the external costs arising from his pollution. Internalization is complete if the polluter assumes the total costs from pollution, and it is incomplete if the community assumes part of the cost of the pollution.¹²¹

In international law, the polluter pays principle was incorporated into Agenda 21 and the Rio Declaration at the 1992 UNCED. Principle 16 of the Rio Declaration states that

National authorities should endeavor to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.¹²²

Regarding the application of the polluter pays principle as an instrument for pollution prevention, it has been suggested by De Sadeller that the polluter pays principle should be applied in a way consistent with the preventive principle.

Put in the service of prevention, the polluter pays principle should no longer be interpreted as allowing a polluter who pays to continue polluting with impunity. The true aim of the principle would henceforth be to institute a policy of pollution abatement by encouraging polluters to reduce their emissions instead of being content to pay charges. In this way the polluter pays and preventive principles would constitute two complementary aspects of a single reality.¹²³

Even though this principle is easy to state in abstract terms, it is very difficult to apply in practice. Identifying the polluters as well as determining who must suffer the economic consequence, and how much the polluter should pay could be problematic. For instance,

¹²¹ *Supra* note 98 at 21.

¹²² *Rio Declaration*, *supra* note 75 at Principle 16

¹²³ *Supra* note 98 at 36.

cars cause pollution. However, is the polluter the car manufacturer? Is it the car driver? Is it the fuel supplier? Is it the road builder? Moreover, if large manufacturer causes pollution, should it be able to pass the cost of its pollution on to its customers in the form of extra charges?¹²⁴

In the case of a mining installation, it is not easy to identify who causes the pollution either. Is it the manager in charge of the installation? Is it the manufacturer of the defective parts of the installation? Is it the mining company holder of the license? Are the shareholders of the mining company? Are all of them? In what proportion should each have responsibility?

These questions have been partially answered by the implementation of environmental taxation in some countries. In this regard, De Sadeller indicates, "It is generally recognized that the polluter pays principle implies setting up a system of charges by which polluter help finance public policy to protect the environment".¹²⁵

There are also problems of implementation of the polluter pays principle related to pollution that has been caused in the past. The polluter pays principle is very difficult to apply for cleaning up old mine sites because in most of the situations it is almost impossible to identify the polluter, or the polluter may have gone out of business¹²⁶. If the polluter pays principle is apply in a retroactive way, it could turn in an unfair practice in the case of new companies running its business in the same area as the polluter of the past. The stockholders and managers of the new business cannot be responsible and be obliged to pay for the remediation of the site that was polluted by another company, or at least such practice will not be consistent with the definition of the principle. However, the polluter pays principle must be applicable in a retroactive way when the polluter from

¹²⁴ *Supra* note 1 at 54.

¹²⁵ *Supra* note 98 at 44.

¹²⁶ *Supra* note 40 at 67 – 68.

the past is identifiable.

In Peru, the ENRC states that the costs of prevention, monitoring and compensation from harm caused to the environment are to be borne by the polluter.¹²⁷ However, the Peruvian environmental mining legislation does not have any reference to the polluter pays principle and the mentioned authorities have not implemented any internalization of environmental costs in the form of environmental taxation yet.

2.5. Participation

According to Sunkin, Ong and Wight, the participation principle "... is based on the premise that in order to ensure the effective participation of environmental laws at all levels, individuals should be able to participate in environmental decision-making".¹²⁸ The experience of mine companies interacting with communities in the zones of influence of the mine has shown that sustainable use of natural resources cannot be achieved without involving local people, who are economically, socially and culturally dependant on the management of the natural resources.¹²⁹

The participation principle was adopted as a leading principle in the Rio Declaration. Principle 1 indicates:

Human beings are the center of concern for sustainable development. They are

¹²⁷ ENRC, *supra* note 96 s.1(6).

¹²⁸ *Supra* note 1 at 54.

¹²⁹ Toru Iwama, "Principle of public participation in the management of natural resources and its implementation" (1999) online: Institute of Global Environment and Society <www.iges.org.jp/en/fc/phase1/ir99/1-1-Iwama%20.PDF> (date accessed 31 July 2003).

entitled to a healthy and productive life in harmony with nature.¹³⁰

Principle 10 of Rio Declaration states that:

Environmental issues are best handled with the participation of all concern citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making-processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.¹³¹

On the other hand, the CBD, in Article 14 (1) (a), allows public participation, where appropriate, in environmental impact assessment procedures for the proposed projects that are likely to have significant adverse effects on biological diversity.¹³²

The 1998 Convention on Access to Information, Public Participation in Decision-making and Access to Justice Environmental Matters is a multilateral treaty adopted on June 25, 1998, by the United Nations Economic Commission for Europe. However this convention is not binding for most states is influential in the international behavior of them. It constitutes the first environmental treaty that requires each party to guarantee every person's right to access information, public participation in decision-making and access to justice in environmental matters, in order to contribute to protect the right of every person of present and future generations to live in an environment adequate for his or her health and well-being. Article 2 (4) defines the public to mean one or more natural or legal persons, and, in accordance with national legislation or practice, their associations, organizations or groups.¹³³

¹³⁰ *Rio Declaration*, *supra* note 75 at Principle 1.

¹³¹ *Ibid* at Principle 10.

¹³² *CBD*, *supra* note 81.

¹³³ *Supra* note 129 at 4.

It is now important to examine the elements of the principle of participation that are the composition of the participants and the level of participation. The composition of the participants is related to the question: Who is able and should be allowed to participate? Thus, the participants are the public in general, the public affected or concerned, the local community and indigenous peoples. On the other hand, the level of participation is recognized in three levels: access to information, participation in decision-making, and access to means of redress. Participation in decision-making includes consultation, representation, voting making deliberations, projects, objections, and participation in environmental impact assessment procedures.¹³⁴

As was mentioned in Chapter 1, the public participation of non-governmental organizations and citizens is expanding worldwide, constituting a new trend for international mining environmental laws that often influences environmental policy and regulatory reform. However, it cannot be forgotten that information regarding environmental practices and sustainable development in the industry is based on expert technical opinion and scientific advice, and some information cannot be understood or can be misunderstood by the local community that lacks sufficient scientific knowledge. This problem is particularly significant in the case of developing countries where the mines sites are located in isolated areas and the communities around the mines have limited educational background (most of the population has not completed elementary school). As stated by Lemons and Brown:

A fundamental dilemma surrounding problems of sustainable development is how to balance the need for expert scientific knowledge with the need to involve the public in the decision-making process. In other words, to what extent should scientific controversies about sustainable development problems be openly discussed in the

¹³⁴ *Ibid* at 11 – 15.

public participation phases of decision-making.¹³⁵

To answer the above question, there are two theories. First, the Scientific and Technical Rationality Theory states that decision-making about problems of sustainable development properly ought to be left to people with expert knowledge. The proponents of this theory hold the view that the scientific and technical problems of managing large scale and complex environmental issues of sustainable development are not easily understood and resolved by the public. Moreover, the proponents of this theory suggested that the fundamental differences people have about how problems should be handled generate endless debate and controversy. From their point of view, people and local government with different interests may review and comment on scientific and technical documents but they should not be brought into the decision-making process regarding the complex scientific dimensions of the problems of sustainable development and environmental protection.¹³⁶ Second, the Democratic Perspective Theory asserts that a fundamental issue for sustainable development decision-making is the relationship between citizens and the institutions that hold power. The proponents of this theory believe that resolving scientific problems of sustainable development ought to be open to citizen participation and be informed by concerns such as questions of distributive justice, concepts of freedom and decentralized decision-making. The democratic perspective requires, even in issues that are scientifically complex, a high level of citizen participation in decision-making process. In such cases, the scientific element will be one more element under consideration along with social and community factors, but the review and evaluation should not be left to scientific experts entirely.¹³⁷

¹³⁵ John Lemons & Donald Brown, *The role of science in sustainable development and environmental protection, decision-making, Sustainable development: Science, ethics and public policy*, ed. by John Lemons and Donald Brown, (Boston: Kluwer Academic Publishers, 1995) at 26.

¹³⁶ *Ibid.*

¹³⁷ *Ibid* at 27.

In developing countries such as Peru, although the local communities lack formal educational background, the decision-making process needs to consider their opinion because scientist and technicians usually do not consider their social and cultural concerns. Moreover, not providing local communities with the opportunity to be heard and with the opportunity to propose suggestions could result in not respecting the human rights of the local communities. For instance, in two cases of Canadian mining companies attempting to invest and investing in Peru that did not allow sufficient public participation of the local communities, the companies ended up in facing massive domestic and international protests. (This cases will be described and analyzed in Chapter 4).

The ENRC states that the community participates directly and indirectly in the establishment of the environmental policy and in the execution and implementation of tools regarding that policy¹³⁸. Unfortunately, this definition stated by the ENRC has not been followed in a real case. (For more information refer to the Manhattan Minerals Corp. case in chapter 4).

At the international level, Peru is party of the Convention 169 of the International Labor Organization which recognizes the right of indigenous communities to maintain their traditions and ancestral knowledge, as well as the right to participate in the decisions that could affect their land and in the decisions and investment in their land.¹³⁹

As was mentioned, Peru has also ratified the CBD. In accordance to the objective of this treaty, the regulations of the *General Mining Law* requires a public hearing to be held prior to the approval of the EIA for mining operations. Unfortunately, that same practice has not been regulated for the elaboration of the PAMA. However, the effectiveness of

¹³⁸ ENRC, *supra* note 96 s.34.

¹³⁹ Convention 169 of the International Work Organization. Peru is party through Legislative Resolution 26253 (date published: 15 April 1994).

the public hearing in the case of the EIA has been questioned in most of cases because the hearings are only held in the offices of the Ministry of Energy and Mines in Lima, far away from the local communities influenced by the mining operations. Another factor detracting from the effectiveness of the public hearings is that they are held in Spanish without translation into Quechua, despite the fact that most of the communities only speak Quechua. Finally, the Peruvian mining authorities are not required to consider the contributions made by the representatives of the local communities in the hearings.

The participation principle has become more relevant in the case of mining activities in Peru. The communities in the zones of influence of the mine sites and mine installations, and the indigenous peoples that live in the area are increasing their awareness about environment concerns. (To illustrate this challenge for the mining industry a case of a Canadian mining corporation investing in Peru and another case of a Canadian mining company attempting to invest in Peru are presented in Chapter 4).

3. *International environmental management systems*

This section describes international environmental management systems that can be implemented in developing countries to improve environmental mining standards.

Domestic or international laws do generally not require environmental management systems; however, different types of environmental management systems serve to improve the efficiency of operations and to avoid causing pollution from industries that are able to damage the environment.¹⁴⁰ The adoption of an environmental management system provides potential investors and purchasers of goods and services the necessary confidence to invest in a specific business or to purchase specific products. It also

¹⁴⁰ Environmental Law Institute, *Pollution prevention and mining: A proposed framework for the Americas* (Washington DC: Environmental Law Institute, 1999) at 30. [hereinafter ELI]

provides companies the opportunity to comply with the environmental protection requirements required by certain international financial institutions to have access to loans. In conclusion, the application of environmental management systems benefits the company's operation by promoting a positive environmental image of the company and by avoiding the creation of gaps between other competitors that have already adopted it.¹⁴¹

In the following sections two types of environmental management systems will be analyzed: self regulations and in particular Responsible Care Program, that is applicable only for the chemical industry, but it is an excellent example for another industries such as mining; and, system-based approaches to environmental management and regulation, in particular the International Standards Organization, ISO 14000.

3.1. Responsible Care

Responsible Care is a self-regulatory scheme designed for, and related exclusively to, the chemical industry. It is an extremely ambitious and broad-self regulatory scheme that is intended to reduce chemical accidents and pollution by involving the community in decision-making.¹⁴² Australia was one of the first countries to adopt Responsible Care and it was later adopted by Canada and the United States. Responsible Care operates in 41 countries and reaches approximately 88% of the global chemical industry.¹⁴³ As mentioned by Gunningham, "... Responsible Care is likely to be the blue print for future

¹⁴¹ *Supra* note 65 at 172.

¹⁴² Neil Gunningham, "Environmental management systems and community participation: rethinking chemical industry regulation" (1998) 16/2, UCLA, Journal of Environmental Law and Policy. 335.

¹⁴³ Canadian Chemical Producer's Association, online <www.ccpa.ca/english/who/rc/> (date accessed: 7 August 2003)

self regulatory initiatives in other industries".¹⁴⁴

According to Responsible Care principles, chemical companies commit themselves to the improvement of all the aspects of their performance that relate to the protection of health, safety and the environment. The commitment also includes improving relations with costumers and communities, product use, and overall operation.¹⁴⁵ The American Chemistry Council establishes as guiding principles of Responsible Care the following:

- To seek and incorporate public input regarding our products and operations.
- To provide chemicals that can be manufactured transported, used and disposed of safely.
- To make health, safety, the environment and resource conservation critical considerations for all new and existing products and processes.
- To provide information on health and environmental risks and pursue protective measures for employees, the public and other key stakeholders.
- To work with customers, carriers, suppliers, distributors and constructors to foster the safe use, transport and disposal of chemicals.
- To operate our facilities in a manner that protects the environment and the health and safety of our employees and public.
- To support education and research on the health, safety and environmental effects of our products and processes.
- To work with others to resolve problems associated with past handling and disposal practices.
- To lead in the development of responsible laws, regulations and standards that safeguards the community, workplace and environment.
- To practice Responsible Care by encouraging and assisting others to these principles and practices.¹⁴⁶

¹⁴⁴ *Supra* note 142 at 337.

¹⁴⁵ *Ibid.*

¹⁴⁶ Responsible Care Practitioners site, online <www.americanchemistry.com/rc.nsf/unid/nnar-

Responsible Care Certifications are provided to those companies that prove each year, through an audit by an independent third party, that their management system in place is working in accordance with the guiding principles, mentioned above.¹⁴⁷

The decline of the mining industry's public image regarding environmental behavior cannot be denied. The decline is closely connected to massive protests by local communities whose environment was negatively affected by mines sites, especially in developing countries. To deal with the problem mentioned, some large multinational mining corporations that rely heavily on their corporate image for their commercial success have adopted ISO 14000 standards (analyzed below), a management standard that does not incorporate public participation into its principles. The success and broad acceptance of the Responsible Care Program in the chemical industry constitutes an excellent incentive for mining companies, to associate and adopt a similar self-regulatory system in order to enhance their environmental behavior and to stop losing public support. Responsible Care not only includes the management system, but also adds public participation, safety transportation and distribution products, and mechanisms to facilitate technological transfer.¹⁴⁸

3.2. International Standard Organization - ISO 14000

In today's global economy, international mining corporations are increasingly called upon to demonstrate sound management of economic, social and environmental issues. Evidence suggests that a focus on these three elements results in advantages in financing, insurance, marketing, regulatory treatment and other areas.

[4ctqzm?opendocument](#)> (date accessed: 7 August 2003)

¹⁴⁷ *Ibid.*

¹⁴⁸ *Supra* note 142 at 352.

The ISO 14000 series of standards, and in particular the environmental management standard ISO 14001, is probably the most globally known environmental management system. It provides a framework for companies to identify, evaluate and manage their environmental risks, allowing them to take a systematic and integrated approach to environmental management; within the framework, companies introduce their own policies, objectives programs, and measurement and assessment methodologies.¹⁴⁹

According to the ISO 14000/ISO14001 Environmental Management Guide, ISO 14000 is a series of international standards on environmental management. It provides a framework for the development of both the system and the supporting auditing program.¹⁵⁰ ISO 14001 was first published in 1996 and specifies the actual requirements for an environmental management system. It applies to those environmental aspects over which the organization has control and over which it can be expected to have an influence.¹⁵¹ ISO 14004 was also published in 1996; it provides guidance on the development and implementation of environmental management systems and principles, and their co-ordination with other management systems.¹⁵² ISO 140011, ISO 14010/11 and ISO 14012 are also part of ISO 14000 series. They provide guidelines and general principles for auditing environmental management systems.

ISO 14001 is applicable to any organization that wishes to:

- Implement, maintain and improve an environmental management system.
- Assure itself of its conformance with its own stated environmental policy (those policy commitments of course must be made).

¹⁴⁹ *Ibid* at 354.

¹⁵⁰ ISO 14000/ISO14001 Environmental Management Guide, online <www.iso14000-iso14001-environmental-management.com/> (date accessed: 7 August 2003)

¹⁵¹ *Ibid*.

¹⁵² *Ibid*.

- Demonstrate conformance.
- Ensure compliance with environmental laws and regulations.
- Seek certification of its environmental management system by an external third party organization.¹⁵³

The whole ISO 14000 intend to provide management tools for organizations to improve their environmental aspects and to improve their environmental performance. The adoption of it can provide significant economic benefits to the mining company, including: reduction of raw materials, reduction of energy consumption, improves of the process efficiency, reduction of waste generation and disposal cost and utilization of recoverable resources. Of course, associated with each economic benefit are distinct environmental benefits as well.¹⁵⁴

Some international mining corporations have adopted these standards either to promote a positive environmental image or to avoid creating a gap with their competitors that have already adopted it. The following chart shows the adoption of the ISO 14001 Standard by some international mining corporations, including some mining corporations currently investing in Peru.

¹⁵³ Patricia Yarnell, ISO 14001 Environmental Management, online <www.trst.com/yarnell-thesis.htm> (date accessed: 3 September 2003)

¹⁵⁴ Benefits of the ISO 1400 family of international standards, online <www.iso.ch/iso/en/iso9000-14000/> (date accessed: 3 September 2003)

Table 6 Environmental Management Systems ISO 14001 adopted by mining corporation

Company	Year	Environment management system
BHP, Australia (see note 1)	1998	ISO 14001 adopted.
Falconbridge, Canada	1999	6 of the operations have obtained ISO 14001 certification by 2002.
Goldfields, Australia	1999	Commitment to implement ISO 14001 but not to obtain the certification.
Homestake, USA	1997	Commitment to adequate the safety, healthy and environmental systems to ISO 14001.
Noranda, Canada (see note 1)	1998	Safety, healthy and environment system based on ISO 14001.
North Limited, Australia	1997	ISO 14001 adopted.
Pasminco, Australia	1997	Commitment to adopt ISO 14001
Placer Dome (see note 1)	1998	Environmental system based in ISO 14001
Rio Tinto	2002	ISO 14001 adopted and certification obtained.
Teckcominco (see note 1)	2001	ISO 14001 adopted.
Theiss, Australia	2001	ISO 14001 adopted and certification obtained.
Western Mining Corporation	1998	ISO 14001 adopted.

Source: Adapted from Ministry of Energy and Mines

Note (1): Currently investing in Peru.

However, according to Gunningham, there are 3 reasons why ISO 14001 is not an adequate regulatory tool: first, it suffers from a number of internal weaknesses; second, serious risks of implementation failure exist; and, third, the cost of implementing ISO 14001 may exceed the economic benefits, at least in the short term. Gunningham indicates that the internal weaknesses are:

- The standard does not establish requirements for environmental performance.
- The commitment to continual improvement must not be taken too seriously because

the standard states that the rate and extent of continual improvement will be determined in the light of economic and other circumstances.

- There is a serious danger that many auditors without environmental skills accredit an audit ISO 14001.
- ISO 14001 does not require firms to make their progress in attaining the objectives and targets they set under the standard public.
- ISO 14001 is limited by the fact that all normative or visionary material has been removed from its content at the drafting stage.¹⁵⁵

It is my opinion that despite the deficiencies pointed out by Gunningham, ISO 14001 may be used as a framework for mining companies considering additional important aspects such as public participation and safety transportation of minerals products and chemicals. Even though having ISO 14000 does not necessarily indicate that a company's environmental performance is superior to that of its competitors, it might indicate a number of important things about the company's attitude towards the environment. For instance, establishing and maintaining an environmental management system requires a significant investment of time and resources and the fact that a company makes this investment might indicate its commitment to monitoring, managing and improving its environmental performance. Additionally, to be able to be registered, the company must demonstrate to a neutral third party observer on an ongoing basis that it has identified significant environmental aspects of its operations, that it is taking steps to control them, and that those steps are proving effective. Thus, ISO 14000 might not be a guarantee of improved environmental performance, but it does provide companies with a means of demonstrating their commitment to that goal, and a set of proven methods for achieving it.

The ISO 14001 management system is voluntary in Peru. Only one Peruvian mining

¹⁵⁵ *Supra* note 142 at 359 - 361.

company, Compania Minera Milpo S.A., has voluntarily adopted ISO 14001.¹⁵⁶ Instead, Peruvian mining environmental authorities rely on third party environmental audits to monitor and enforce compliance with their environmental regulatory mining program. Peruvian mining operations are subject to annual audits conducted by an independent inspector that is required to conduct the audit in accordance with surveys prepared by the General Office of Mining. However, Peruvian environmental authorities should consider including ISO 14001 as a requirement to complement the Peruvian environmental mining regulation by adopting pollution prevention measures. The aspects that are not included in ISO 14001 guidelines, such as public participation, should be a priority for the mining company in order to apply a better and adequate environmental management system.

¹⁵⁶ Ministry of Energy and Mines of Peru, online <www.mem.gob.pe> (date accessed: 2 July 2003)

Chapter 3 Pollution prevention tools

This chapter analyzes the pollution prevention tools utilized by environmental mining authorities, and in particular the legal tools that the mining environmental authorities have introduced to prevent, control and mitigate pollution in Peru.

Environmental concerns are a relatively new phenomenon in Peru. Nevertheless, they are reflected at the legislative level. The *Peruvian Constitution of 1979*, the country's eleventh since independence in 1821, stated that "Everyone has the right to inhabit a healthy and ecologically balanced environment adequate for the development of life and the preservation of landscapes and nature. Everyone has the duty to conserve the environment. It is an obligation of the state to prevent and control environmental contamination".¹⁵⁷ These rights and obligations were retained in the present Peruvian Constitution, which dates from 1993.¹⁵⁸ It also states in its chapter "Environment and Natural Resources" that the State promotes the sustainable development of its natural resources. However, Peru did not incorporate certain international environmental principles such as the precautionary or polluter pays principle or responsibility of the State in cases of transboundary pollution in its current constitution.¹⁵⁹

The ENRC (Codigo del Medio Ambiente y Recursos Naturales), Legislative Decree 613, is the first environmental framework in Peru. It represents a qualitative change from previous legislation because it attempts to coherently integrate the few, dispersed and

¹⁵⁷ *Peruvian Constitution*, 1979, title III, c.II, s.123 (declared void April 5, 1992).

¹⁵⁸ On April 5, 1992, President Alberto Fujimori unconstitutionally dissolved the Peruvian Congress. On November, 22, 1992, a new congress was elected to revise the 1979 Constitution and to legislate through the end of Fujimori's government term in 1995.

¹⁵⁹ Jorge Caillaux & Patricia Moore, "UNCED and Agenda 21: a view from Peru" (1993) 14/1 *Colorado Journal of International Environment Law and Policy*. 186.

contradictory laws that preceded it, establishing the framework for environmental and natural resources matters.¹⁶⁰ It was issued on September 7, 1990 and since then a significant number of environmental regulations have been enacted in Peru. The ENRC also refers to the application of the sustainable development principle by stating that the design, formulation and implementation of Peruvian environmental protection policy is based on the conservation of the environment and of natural resources, to satisfy the needs of present and future generations. The ENRC adds that for this purpose, the government promotes a balance between socio-economic development and the exploitation of natural resources.

The ENRC also establishes the general framework for all the specific laws of each sector of the economy of Peru. Thus, the mining sector confronted a new era of environmental concern and the Ministry of Energy and Mines has regulated the general environmental rules contained in the ENRC and applied it in all the phases of mineral processing. Environmental laws have been largely regulated and enforced by sub-sectors of the Ministry of Energy and Mines: mining, electricity and hydrocarbon. Part of this third chapter refers specifically to the laws, regulations and policies applicable to the mining industry issued by the mining sub-sector.

The regulations issued by the Ministry of Energy and Mines regarding mining activities contain various elements. For instance, the preparation and presentation of an Environmental Impact Assessment (EIA) is required in the case of new projects or projects that intend to expand their operations beyond certain limits in order to comply with the maximum limits set by the Ministry of Energy and Mines. It also acknowledges the need to provide a different treatment to the mining projects that were already operating on the day of issue of the regulation. Hence, in such cases the company must prepare an Environmental and Compliance Management Program (PAMA) (Programa de Adecuacion al Medio Ambiente), to adjust its production process to the new regulations

¹⁶⁰ *Supra* note 6 at 148.

within a term of ten years. Specialized companies registered with the Ministry of Energy and Mines must elaborate the PAMA and the EIA. Another element is the provision that the Ministry of Energy and Mines is the entity responsible for establishing the maximum permissible limits and for the issue of the relevant monitoring protocols and guidelines for the preparation of several documents required by the sub sector of mining, in order to standardize the fulfillment of obligations. A final element is related to the supervision process that can be only be done by an audit and inspection company authorized and registered with the Ministry of Energy and Mines.¹⁶¹

This chapter will describe the pollution prevention tools and will examine the legal tools that are intended to promote pollution prevention in mining activity in Peru.

1. Legal tools:

1.1. Environmental Impact Assessment

The EIA can require the mining operation, conducted by the private or State sector, to identify potential sources of pollution and to avoid or minimize them through alternative designs for a project. The requirement for the process to be completed before the proposed activity proceeds is critical to the effectiveness of the EIA.¹⁶²

The requirement of elaboration of an EIA is increasing in domestic legislation and in international environmental treaties and agreements. In South American countries, the

¹⁶¹ Armando Arrieta Munoz & Jenny Caldas, *Report on the Environmental Legislation in Peru* (Lima: Muniz, Forsyth, Ramirez, Perez-Taiman y Luna Victoria abogados, 1999) at 10 – 11.

¹⁶² *ELI*, *supra* note 140 at 7.

requirement of the EIA is gaining great popularity as well. Chapter 35 of Agenda 21¹⁶³ assumes that EIA should be the major tool in providing factual information in sustainable development decision-making. "Since the EIA provides a reasonably effective, flexible tool for examining the extent to which a proposed mining project meets the requirement of 'sustainable development', their use can be expected to rise. Countries without national EIA laws may look for regional treaties or see them as required by 'customary law' in the future".¹⁶⁴

The following are the common requirements contained in the EIAs regarding the world mining industry:

- Examination of cumulative impacts on the environment.
- Examination of social impacts in the zone of influence of the mine site.
- Impact of the mining operation on other existing and foreseeable projects in the same area.
- Evaluation of alternative methods of excavation, beneficiation of ore and treatment and disposal of tailings.
- Identification of monitoring requirements and mitigation measures to be implemented during and after the mining process.
- Identification of closure requirements, post – closure care and contingency plans;
- Engaging the public by allowing them to identify issues important to them.
- Affording an opportunity for affected local governments to identify needs for additional data on points of particular concern.¹⁶⁵

There is a worldwide recognition that the EIA is an adequate tool to mitigate and prevent pollution derived from the mining process; however, the quality of scientific information contained in the EIA has sometimes. There has been considerable controversy about how

¹⁶³ Further information in Chapter 2 "International standards".

¹⁶⁴ *Supra* note 9 at 55.

¹⁶⁵ *ELI, supra* note 140 at 7.

the EIA should deal with matters of scientific uncertainty about environmental impacts, for instance in cases of incomplete or unavailable information.¹⁶⁶ A suggested way to assess the quality of EIA is to conduct post-audits which determine the current impacts and outcomes of projects for which an EIA has been prepared. Post-audits are important because the impact predictions contained in the EIA must be viewed as having considerably more uncertainty than those based on rigorous scientific experiments.¹⁶⁷

In Peru, the ENRC establishes that every private or government-mining project or activity that may endanger the environment requires an EIA that must be approved by a competent authority.¹⁶⁸ The *Regulation for the environmental protection in the mining activity*¹⁶⁹ and the *Guidelines for the preparation of the EIA* state that every new mining project or current one that intends to extend its operation by more than 50 % should prepare an EIA. According to the *Guidelines for the preparation of the EIA*, the purpose is to establish the existing environmental conditions in the mine area and in the zones of influence of the mine in order to evaluate the possible environmental impacts that could occur, and to identify the mitigation measures in order to address the acceptable limits.

The *Guidelines for the preparation of the EIA* enumerate five steps that should be followed to elaborate an EIA in Peru:

- Establish the current environmental conditions.
- Identify the environmental impacts utilizing the most appropriate technology for the type and nature of the project.
- Estimate the extent and magnitude of the environmental impacts identified.
- Interpret the meaning of the environmental impacts.

¹⁶⁶ *Supra* note 135 at 28 – 33.

¹⁶⁷ *Ibid* at 28 – 29.

¹⁶⁸ ENRC, *supra* note 96 at s.8,(c).

¹⁶⁹ *Regulations for Environmental Protection in the Mining Activities*, Supreme Decree 016-93-EM, s.20 (1993) (date published: 1 May 1993) [hereinafter EPMA]

- Communicate the results to the Commission of Environmental Affairs of the Ministry of Energy and Mines.

The EIA should also contain a section that explains the measures to control and mitigate the effects of the activity. It is also important to mention that in the case of small and artisanal mining projects an Environmental Evaluation is required instead of the EIA.¹⁷⁰ The Environmental Evaluation differs from the EIA in the issues that must be addressed, and the focus is on pollution control and mitigation.

The *Guidelines to elaborate the EIA* also require the description of the closure plan. According to the mining regulation, the closure plan should establish the measures to prevent the contamination of bodies of water.¹⁷¹ The recommendations contained in the guidelines focus on treatment and disposal of wastes to achieve acceptable limits.

It should also be considered that the environmental standards that establish pollution prevention, mitigation and remediation techniques may be incorporated as a requirement to approve the EIA or the PAMA (analyzed below), or to issue a permit (analyzed below) or as a requirement. The mentioned techniques could include:

- Limitations on the use of toxic substances in the mine site.
- Requirements for the construction and maintenance of beneficiation units to prevent releases of polluting substances.
- Requirements for the safe transportation of toxic substances.
- Requirements for the treatment, disposal and management of tailings.¹⁷²

Peru has established maximum permissible limits for liquid effluents and suspended

¹⁷⁰ *Law of the Legalization of Small and Artisanal Mining*, Law 27651 (2002) (date published: 21 January 2002)

¹⁷¹ *EPMA*, *supra* note 169 at s.27 (3).

¹⁷² *ELI*, *supra* note 140 at 18.

solids, and maximum permissible levels of air contaminants. For these purposes, the mining authorities have elaborated environmental management guidelines that suggest practices on topics such as controlling pollution of water in mining operations, acid mine drainage and tailings management for the elaboration of the PAMA and the EIA.¹⁷³

1.2. Environmental Compliance and Management Program

The Peruvian legal tool to prevent contamination in the case of mining projects that were operating at the time the ENRC and the mining regulations were put in place is the PAMA.

The PAMA concept is not included in the ENRC. However, the preliminary section of the *Regulation for the environmental protection in the mining activity* defines the PAMA as the program which contains the actions and investment necessary to incorporate technology and alternative measures to reduce or eliminate emissions and/or discharges in order to comply with the maximum permissible levels established by the mining authority.¹⁷⁴

According to the *Regulation for environmental protection in mining activity*, existing mining operations should achieve the following requirements:

- To present an annual environmental impact declaration.
- To monitor their activities for 1 year and produce a preliminary environmental assessment that must be approved or rejected by the Ministry of Energy and Mines.
- To prepare and present the PAMA within 1 year after the approval of the preliminary assessment.

¹⁷³ *Environmental Guidelines to Elaborate the PAMA and the EIA in the Mining Sector*, Directorial Resolution 013-95-EM/GGAA (1995) (date published: 31 March 1995)

¹⁷⁴ *EPMA*, *supra* note 169 at preliminary title, s.2.

- To achieve a minimum annual investment that must not be less than 1 % of the total annual sales.
- To carry out the PAMA within a maximum of five years, with an exception of certain operations such as smelting for which the deadline is ten years.

Just like an EIA, an independent firm registered with the Commission of Environmental Affairs of the Ministry of Energy and Mines should carry out the PAMA.

1.3. Planning

Planning is another effective legal tool that can be used to implement pollution prevention. There are different types of plans that can be incorporated into the EIA or the PAMA: preparation of exploration plans (when there is to be significant disturbance of land and water), mining plans, closure plans and contingency plans that can help assure that mining operations do not produce unintended pollution.¹⁷⁵ This section of the chapter deals specifically with closure plans.

As mentioned previously, mining activity can disturb the environment and can cause harm to it during all the phases of the operation and after closure. Therefore, as the Environmental Law Institute points out, it is important to design the closure of a mining operation before the operation starts, to ensure that it can be closed in an environmentally safe manner:

If closure planning is postponed until the middle or the end of the mineral extraction phase, it may be too late to use certain pollution prevention approaches. Moreover, given the volatility of markets of metallic minerals, such issues as perpetual care and secure disposal cannot be left unaddressed until a time when revenues may be

¹⁷⁵ *ELI, supra* note 140 at 11.

insufficient to allow them to be properly carried out.¹⁷⁶

In addition, mining firms and governments could visualize a closure plan as a present economic opportunity instead of a negative economic impact; for instance, toxic products could warrant economic reprocessing instead of being dumped.¹⁷⁷ Another illustration is related to water treatment. Costly water treatment projects are often part of closure plans rather than implementing acid mine drainage prevention at the beginning of the mine project. Acid mine drainage prevention measures are a cheaper solution and often results in the recovery of metals¹⁷⁸. A final case is health care costs. Instead of paying expensive health care costs to communities affected by degraded drinking water, it is cheaper to implement technical solutions to treat the chemical effluents at the beginning of the project.¹⁷⁹

Closure plans are required in Peru as part of the EIA or the PAMA. The requirements and suggestions are contained in regulations and guidelines.

1.4. Permits

Permits are used as legal tools by some governments to assure the ability to review proposed mining operations and to take enforcement action against those that do not carry out their legal commitments.

In addition, the research to be performed before the issuance of a permit also represents an opportunity to address enforcement and evaluation of the operator's skills to operate

¹⁷⁶ *Ibid* at 13.

¹⁷⁷ *Supra* note 43 at 138.

¹⁷⁸ *Ibid*.

¹⁷⁹ *Ibid*.

the proposed mine. For instance, authorities can identify if the proposed operator had a negative environmental record in the past, or if the proposed operator has sufficient financial resources to carry out the requirements for running the mining project. Furthermore, the review and renewal of permits may provide the public with the opportunity to participate in the decision-making process regarding environmental issues by submitting concerns and comments.¹⁸⁰

Although in some other jurisdictions, permits and EIA are different requirements for implementing a mining project, in Peru the permits and EIA approval are equivalent.¹⁸¹ Therefore, many of the potential pollution prevention functions of permits, such as identification of alternatives, pollution control measures, monitoring and mitigation, have already been analyzed above in the discussion of EIAs, PAMAs and planning.

1.5. Treatment of toxic substances

Monitoring and disclosure requirements for toxic substances in mining operations can provide information that allow mine companies and governments to adjust management practices in order to prevent pollution.¹⁸²

In Peru, water resources are the most vulnerable to contamination from mine sites. Flotation tailings are the main environmental hazard to water resources and effective control requires the construction of special technologically designed ponds for their adequate disposal and treatment¹⁸³.

¹⁸⁰ *ELI, supra* note 140 at 15.

¹⁸¹ A mining operation in Canada requires a number of specific permits under federal and provincial legislation in addition to environmental assessment approvals. *Ibid* at 15 – 16.

¹⁸² *ELI, supra* note 140 at 21.

¹⁸³ *Supra* note 6 at 143.

Peruvian mining authorities have decided to involve external audit companies in verifying monitoring information. Monitoring systems must be established to verify compliance with air, water and other environmental regulations in connection with the PAMA or the EIA.

As was mentioned, the presentation of an environmental annual report is a requirement to approve the PAMA. An environmental auditor registered with the Ministry of Energy and Mines must sign this report. In the case of the EIA, the establishment of a monitoring system is required.

According to the environmental guidelines to elaborate the PAMA and the EIA, the annual report and the EIA must include information on atmospheric emissions and discharges, information on acid mine drainage and final disposal of solid and liquid wastes.

1.6. Liability

Liability standards can be excellent legal tools to provide an incentive to mining operations to comply with their pollution prevention and remediation obligations. The most frequent forms of liability are administrative, civil and criminal penalties.

Unfortunately, in many cases the amount of penalties established by the mining authorities may not correlate to damages or cleanup costs. Under such circumstances, the penalties will not be an effective incentive to comply with environmental obligations.¹⁸⁴

There are circumstances that may influence the application of administrative penalties to

¹⁸⁴ *ELI, supra* note 140 at 36.

a specific mining company. Some developing countries depend on certain foreign operations as an important source of foreign exchange and the government might hesitate to be strict in the application of administrative penalties to those companies. Under such circumstances, legal liability may not be persuasive enough to comply with environmental obligations. An interesting case in the Peruvian context is the mercury spill of Minera Yanacocha S.A.¹⁸⁵ In this case, after significant and constant pressure from the local communities and international environmental organizations, the Peruvian government imposed a fine of approximately US\$500,000 on the company.

In a worst case, it has been suggested that depending on the level of enforcement of a regulatory regime, some mining firms, particularly those operating in developing countries, may prefer to pay financial penalties and fines for affected water and air quality. These may amount to less than the cost and effort involved in remedial action such as water treatment, and considerably less than the cost involved in innovation of technology or improving pollution controls. In some cases, it is the government that ends up paying the remedial costs and the country that suffers from environmental degradation.¹⁸⁶

In Peru, the Ministry of Energy and Mines has approved a scale of administrative penalties applicable to all mining operations in the country.¹⁸⁷ The administrative penalties are established in Unidades Impositivas Tributarias – UIT (Taxable units). 1 UIT is equivalent to S/ 3 100.00 (approximately US\$ 898.00¹⁸⁸) for year 2003.

¹⁸⁵ For detail information refer to: Moles Organization, online <www.ems.org/banks/yanacocha.mercury_spill.html> (last modified: August 2002) (date accessed: 22 November 2002)

¹⁸⁶ *Supra* note 43 at 153.

¹⁸⁷ *Fines for the Mining Sub Sector*, Ministerial Resolution 353-2000-EM/VMM, (2000) (date published: 1 September 2000)

¹⁸⁸ *Diario El Comercio*, 23 June 2003, online <<http://www.elcomercioperu.com.pe/Dolar/>> (date accessed: 23 June 2003)

Table 7 Scale of administrative penalties for mining operations

Infraction	Administrative Penalty	
	Large scale mining	Small scale mining (see note 1)
1. Non-compliance with obligations contained in the ENRC or in the Regulations for environmental protection in mining activity. Operations started without the approval of the EIA, or having approval are not complying with the obligations imposed.	10 UIT for each infraction. Limit of 600 UIT.	2 UIT for each infraction.
If the infractions are determined during an environmental damage investigation.	50 UIT for each infraction. Limit of 600 (see note 2).	10 UIT for each infraction (see note 2).
2. Non-compliance with recommendations formulated as a result of a previous government audit.	2 additional UIT (see note 3)	0.5 additional UIT (see note 3)
3. Non-compliance with obligations contained in the PAMA.	50 UIT	50 UIT
If the infractions are determined during an environmental damage investigation.	Until 600 UIT [see notes (2) and (4)]	Until 120 UIT [see notes (2) and (4)]
4. Discharges and emissions without an authorization.	1 st time: 50 UIT 2 nd time: 600 UIT 3 rd time: discontinue of activities	1 st time: 5 UIT 2 nd time: 60 UIT 3 rd time: discontinue of activities

Notes:

- (1) Operations with less than 350 T/day (amount processed by their operations plants) are considered small-scale mining.¹⁸⁹
- (2) A temporary close of the mining operation can also be imposed.
- (3) In addition to the penalties imposed in the current audit process.
- (4) To characterize the infraction the mining authority will consider the gravity, the

¹⁸⁹ *General Mining Law*, Supreme Decree 014-92-EM, (1992) (date published: 4 June 1992). [hereinafter *General Mining Law*]

economic condition of the operator and recidivism.¹⁹⁰

As can be seen, the maximum administrative penalty for large-scale mining operations is 600 UIT, which is equivalent to US\$ 538,800. This amount could represent a significant penalty for most of the Peruvian mining operations, but it is not a real economic punishment for most international mining corporations or joint ventures between domestic and foreign investors.

Without doubt, the application of the administrative penalty of total or partial discontinuation of the mining operation could be a persuasive tool to avoid environmental degradation in Peru, not only for the significant economic losses that the operation may face, but also for the public image of the company in the domestic and international community. The above-mentioned administrative penalty has not been imposed on any company in Peru as of yet and it is difficult to believe that it will ever be imposed.

Civil responsibility for environmental damages has not been explicitly legislated in Peru; therefore, there are no civil penalties.¹⁹¹ As an exception there are some isolated regulations regarding civil responsibility for environmental matters in some very specific activities that do not include mining.

Criminal environmental liabilities in Peru have been the subject of controversy. The *Peruvian Criminal Code* includes sections regarding environmental offenses, but the application of the law by the criminal authorities has been insignificant.¹⁹² It has been

¹⁹⁰ ENRC, *supra* note 96 at s.116.

¹⁹¹ Enrique Ferrando, *Responsabilidad civil por daño ambiental, Responsabilidad por daño ambiental en el Perú*, ed. by Carlos Chirinos, (Lima: Sociedad Peruana de Derecho Ambiental, 2000) at 10.

¹⁹² Jorge Danos, *Responsabilidad penal por daño ambiental, Responsabilidad por daño ambiental en el Perú*, ed. by Carlos Chirinos, (Lima: Sociedad Peruana de Derecho Ambiental, 2000) at 73 - 74.

suggested that one of the reasons could be the economic power of the companies in a country where corruption is still significant.

In the case of mining operations, some of the environmental requirements are only established in administrative documents named *Guidelines for the protection of the environment* (such as certain requirements enumerated in the guidelines for the elaboration of the PAMA and the EIA). The specific description of the environmental criminal offense in the section of the *Peruvian Criminal Code* requires a breach of an obligation contained in a law.¹⁹³ Because the mentioned guidelines are not laws, non-compliance with certain requirements does not qualify as a criminal offense.

1.7. Financial assurances

Financial assurance mechanism can provide a strong incentive for mining companies to comply with environment protection requirements.

In general, a financial assurance requires the mining operator to provide a financial guarantee of environmental performance before undertaking the mining activity. If the operator fails to comply with the environmental standards, the government is allowed to withdraw the amount of the guarantee. Some of the most common financial assurances are bonds, letters of credit and negotiable securities.¹⁹⁴

In contrast to the legal tools analyzed previously that are, with some variations, common in North American and South American countries, financial assurances are not required in some jurisdictions.

¹⁹³ *Peruvian Criminal Code*, Legislative Decree 635, (1991) (date published: 4 August 1991), s.304.

¹⁹⁴ *ELI*, *supra* note 140 at 23.

For instance, in the case of Canada, financial assurances are generally only required at the provincial level in connection with the closure plan. In the case of British Columbia, the *Mining Act* requires a mine reclamation fund, which holds funds placed by the operators to assure reclamation. The funds are reimbursed upon successful completion of the reclamation.¹⁹⁵

In the South American context, Brazilian mining operations are required to include 1% of the project's budget for measures to prevent and mitigate negative environmental, cultural and social impacts that are identified as part of the EIA. In addition, the mining plan must have a budget and timetable for its execution and the applicant must prove the availability of resources or commitments from financial institutions necessary to carry out the plan. Chile does not require financial assurances to guarantee performance of obligations proposed in the EIA. Argentina allows mining operations to voluntarily register for a program that allows them to create a special reserve for pollution prevention and environmental restoration.¹⁹⁶

As in Chile, Peruvian mining laws and regulations do not require financial assurances to guarantee the performance of environmental obligations contained in the PAMA or the EIA. Mining operations in Peru can be implemented without having a budget for measures to prevent and mitigate negative environmental and social impacts that are identified as part of the PAMA and the EIA.

The regulations for the protection of the environment in mining operations¹⁹⁷ and the guidelines for the elaboration of the PAMA and EIA establish that in the case of major mining projects or in the case of projects with significant impacts on the environment, a contingency plan must be fully described. However, the operator or applicant does not

¹⁹⁵ *Ibid* at 23 - 24.

¹⁹⁶ *Ibid* at 24.

¹⁹⁷ *EPMA*, *supra* note 169 at s.22.

need to prove the availability of financial resources or commitments from financial institutions necessary to carry out the contingency plan.

1.8. Land use restrictions

Another legal tool that could be used as a mechanism for preventing pollution in mining activity is land use restrictions. Certain land areas could be designated unsuitable for mining or certain methods of mining.

The restriction of land use for mining operations are normally related to certain protected areas with particular ecological value, high biodiversity and fragility, areas in close proximity to human settlements, or areas where other forms of economic activities are inconsistent with mining, such as farming and fishing.¹⁹⁸

In the Peruvian case, land use restrictions primarily are related to national security issues. The *Peruvian Constitution* establishes that any foreign, individual or juridical person, could not own or be a titleholder, directly or indirectly, of mines within 50 kilometers of the borders with neighboring countries.¹⁹⁹ The *General Mining Law* states that searches for mineral substances in Peruvian territory is prohibited in urban zones, in zones reserve for national security, in archeological zones and in zones where assets of communal use are located. Nevertheless, the prohibition can be removed with an authorization of the mining authorities.²⁰⁰ The *General Mining Law* does not impose any restriction over areas with particular ecological value, high biodiversity and fragility. Fortunately, the omission was covered by the *Regulations of the General Mining Law* that prohibits the

¹⁹⁸ *ELI*, *supra* note 140 at 24.

¹⁹⁹ *Peruvian Constitution*, 1993, s.71.

²⁰⁰ *General Mining Law*, *supra* note 189 at s.2.

searches of mineral substances in “natural protected areas” as indicated in the ENRC.²⁰¹

The ENRC²⁰² and the *Law of Natural Protected Areas*²⁰³ have established that the government can declare certain natural ecosystems areas as “natural protected areas”. The General Mining Law has indicated that the mine operation concessions conferred before the creation of the “natural protected area” must be respected, and the rights of the mine operator must be respected as well.²⁰⁴ The reason is found in the necessity to provide private mining investors with the guarantee of stability of investment in the mining sector.

In the case of exploration, development and exploitation of metallic mines sites, the *Peruvian Mining General Law* does not establish, in an explicit way, a prohibition related to land use; however, the prohibition applicable to searches of mineral substances mentioned above and the removal of the prohibition by authorization are applicable as well. In the case of non metallic mine sites, operations in certain agricultural areas declared by law are prohibited.

2. Evaluation of Peruvian environmental legislation

Having introduced the definition and requirements of the pollution prevention legal tools, and having addressed the rules that the Peruvian mining authorities have implemented, this section of the present chapter now evaluates the Peruvian environmental legislation in order to analyze the to which pollution prevention legal tools are reflected at the

²⁰¹ *Regulations of the General Mining Law*, Supreme Decree 03-94-EM, (1994) (date published: 15 January 1994), s.5.

²⁰² *ENRC*, *supra* note 96 at s.50 – 57.

²⁰³ *Law of Natural protected Areas*, Law 26834 (2001) (date published: 5 October 2001)

²⁰⁴ *General Mining Law*, *supra* note 189 at s.220.

legislative level in Peru.

In the case of the EIA, it is legislated that it should contain a section that explains the measures to control and mitigate the effects of the mining activity (which include the treatment of toxic substances), but no recommendations for pollution prevention are suggested or required. Consequently, an unfortunate conclusion about the EIA for mining projects in Peru is that the regulations and guidelines are oriented towards complying with maximum permissible limits; thus, there is more focus in mitigating and controlling pollution rather than preventing it.

The same conclusion is applicable in the case of the PAMAs. The due dates to carry out the PAMA in Peru have already taken place in most of the cases of the existing mining operations and Peruvian mining authorities have lost an excellent opportunity to introduce requirements for pollution prevention.

Regarding planning, the evaluation of the EIAs and PAMAs is applicable as well; therefore, the environmental mining authorities in Peru should also improve the rules concerning closure plans.

In the field of liability, the Peruvian authorities should consider choosing the imposition of the application of the administrative penalty of total or partial discontinuation of the mining operation instead of imposing the payment of a fine.

On the subject of financial assurances, the requirement of describing a contingency plan in the EIAs or PAMAS is not sufficient to assure compliance of with such a plan. The Peruvian environmental legislation should request the operator or applicant to prove the availability of financial resources or commitments from financial institutions necessary to carry out the contingency plan.

Finally, although this section evaluates legal tools, it is interesting to include in this evaluation a reference to financial instruments considering that there is an international trend towards the introduction of ecological tax reform in environmental and fiscal policies, encouraging desirable activities, and discouraging undesirable behavior.²⁰⁵ The mechanisms of ecological tax reform that the Peruvian environmental authorities should analyze include: removing subsidies to activities/industry that harm the environment, preferential tax treatment for pollution prevention equipment (accelerate depreciation of assets), green-cost covering charges such as waste permit fees, and incentives to revenue generation, shifting taxes from environmental friendly activities to environmentally damaging activities.

This evaluation of the Peruvian environmental legislation is based on theoretical information; however, it is important to confront theory with reality. Thus, in the effort to reinforce with real cases what have been theoretically analyzed so far, the next chapter of this thesis presents two case studies.

²⁰⁵ Christopher Rolfe, *Upstream Emissions Trading: The Great leap forward for ecological tax reform?*, (Vancouver: West Coast Environmental Law Research Foundation, 2002).

Chapter 4 Manhattan Minerals Corporation and Compania Minera Antamina S.A., case studies

1. Why I chose these companies

This Chapter presents two case studies, Manhattan Minerals Corporation (Manhattan) a junior Canadian mining company attempting to invest in Peru; and Compania Minera Antamina (CMA) that has Canadian, Australian and Japanese stockholders, currently investing in Peru.

The Manhattan case allows the present thesis to illustrate, with a real case, the urgent need to introduce legislative reforms in Peruvian mining environmental laws, especially in relation to citizen participation in the decision-making process regarding mining projects. The conflict that has arisen in the district of Tambogrande, in the Department of Piura, is a fascinating case of a local community organizing against mining development in a traditionally agricultural area. The local community, in an attempt to remedy the deficiencies of the Peruvian mining environmental laws regarding public participation, organized a municipal consultation to demonstrate its rejection of mining development in their region. This municipal consultation was the first of its kind in Peru, immediately following ten years of semi-dictatorial government by Alberto Fujimori.

The Manhattan case also demonstrates the needs to remove the decision-making process regarding environmental standards from the good faith of mining companies, and to give that responsibility to Peruvian mining authorities by upgrading Peruvian mining environmental laws.

The first chapter of this thesis enumerated the new trends that international environmental laws are imposing on the mining industry. Two of those trends are the worldwide expansion of public participation of individuals and non-governmental organizations in the decision-making process of mining projects, and the increase of recognition of the rights of indigenous peoples and local communities. Public participation is also addressed in the second chapter when it refers to the relevance of the participation principle in mining legislation. The Manhattan case is an excellent example of a mining company facing these challenges.

This case has involved the participation of the Peruvian government, Manhattan, the local community of Tambogrande, the local authorities of Tambogrande and Piura, several Peruvian NGOs, several international NGOs and some independent environmental and electoral consultants. Therefore, it is significant in terms of the multi-parties interaction that the citizens of Tambogrande have achieved, which is specially significant given that Tambogrande is a poor and isolated town, which was probably unknown by most Peruvian citizens before the publicity of this case.

Considering that Manhattan was an ongoing case during the period I was writing this chapter, I have established September 15, 2003, (the date when this chapter was finished) as the date for updating the information.

On the other hand, CMA is running a mega-mining project in the northern highlands of the department of Ancash. This company constitutes the largest mining project in Peru. Antamina is a massive operation in an underdeveloped and isolated region in Peru characterized by the presence of indigenous communities, rural poverty and weak government infrastructure.

CMA was a client of the auditing and consulting firm where I was employed in Peru; therefore, I had the opportunity to review the environmental expenses of the project from

the perspective of a tax attorney for almost two years. This situation gave me the opportunity to observe the environmental policy of the company.

This case is interesting because the Antamina mine is a new mining operation resulting from the impact of globalization on the industry, facing the new challenges that environmental law is imposing on the mining industry. In contrast to the Manhattan case, Antamina has been careful to communicate environmental information to the local communities around the mine site, in order to obtain a “social license” to operate. CMA has also improved its environmental performance due to increased feedback from the local communities and the incorporation of local knowledge of the environment in management strategies. Finally, Antamina is the first mining project in Peru that widely distributed its EIA and provided a copy of it to any person or organization that was interested.

This chapter presents the facts of the Manhattan case and the municipal consultation that the municipality of Tambogrande organized to demonstrate the opposition to mining development in their agricultural region. It will also present the Antamina project and the policies regarding social and environment aspects that it has implemented. However, it will also deal with some protests that the company has been facing in the area where the port facilities are situated.

The conclusions and lessons learned from both cases will be presented in Chapter 5.

2. *Manhattan Minerals Corporation.*

2.1. General background

The French company Bureau de Recherches Geologiques et Minières was authorized in

1978 to carry out a pre-feasibility prospecting study in Tambogrande. This authorization constituted the first attempt to develop mining activity in the region. The efforts of the French company and the Peruvian government to establish a mine site failed because there was already significant opposition from the local population based on the desire to maintain the agricultural development in the region.²⁰⁶

In 1999, the Fujimori administration declared the need for private investment in mining activity²⁰⁷ and allowed Manhattan, to acquire ten mining concessions in Tambogrande, which includes an urban area and an area designated for urban expansion. Manhattan purchased the concessions and preliminary studies from Bureau de Recherches Geologiques et Minieres. As mentioned in Chapter 3, the Peruvian General Mining Law, a mining concession is an exploration right over a given territory and the operation of the mine within certain conditions provided by law, including the approval of an EIA.

The Peruvian government granted Manhattan exploration rights over 10,000 hectares for an initial period of four years as of May 1999.²⁰⁸ The Peruvian government also granted the company an option agreement on the Tambogrande concessions for the same initial period of four years and granted the company a one-year extension to exercise the option agreement on the concessions to May 31, 2004.²⁰⁹

²⁰⁶ Stephanie Rousseau & Francois Meloche, *Gold and Land: Democratic Development at Stake. Report of the Observation mission of the Tambogrande municipal consultation process in Peru*, online <<http://serveur.ichrdd.ca/print.iphtml>> (date accessed: 4 September 2002), at 3.

²⁰⁷ *Declaration of Public Necessity of Private Investment in the Mining Activity*, Supreme Decree 014-99-EM, (1999) (date published: 6 May 1999).

²⁰⁸ *Supra* note 206 at 3.

²⁰⁹ CCNMatthews, Manhattan Minerals Corp.: *Option agreement extended to May 2004 Tambogrande Project*, online <www2.cnnmattews.com/scripts/cnn-release.pl?/2003/04/14/0414025n.html> (date accessed: 4 September 2003).

Since the acquisition of the concessions rights, the local population has made public several social and environmental concerns about the establishment of a mine project in Tambogrande. The conflict in Tambogrande between Manhattan and the local population has been taking place during a period of great political confusion in Peru. The Fujimori administration's legacy of State corruption, a crisis of confidence with respect to public institutions, and the social and political demands that the Toledo administration is facing, constitute the background against which the conflict between the population of Tambogrande and the mining company is being played out.²¹⁰

The mining project is situated in the Department of Piura, in the district of Tambogrande, in the San Lorenzo Valley. This valley used to be an almost desert-like region. In the 1950s, an irrigation project financed by the Peruvian government and the World Bank, at a cost of US\$45 million, led to the development of agriculture. The main products are mangos, limes and rice for local and national consumption and for export. The region accounts for 40% of the national production of limes and mangos.²¹¹

The town of Tambogrande is poor, isolated and suffers dramatically from the "Fenomeno del Nino". It is located about 100 kilometers inland from the Pacific coast and about 50 kilometers south of the border with Ecuador.²¹² (Map also shows other mining sites)²¹³

²¹⁰ *Supra* note 206.

²¹¹ *Ibid.*

²¹² Robert E. Moran, *An alternative look at a proposed mine in Tambogrande, Peru*, Report commissioned by: Oxfam America, Washington DC, Mineral Policy Center, Washington DC, Environmental Mining Council of British Columbia, (2001), online <http://www.globalminingcampaign.org/theminingnews/assets/pdf/tambogrande_sp.pdf> (date accessed: 25 August 2003) at 1.

²¹³ Web page of Manhattan Minerals Corporation, online <www.manhattan-min.com/s/TamboGrandeOverview.asp> (date accessed: 28 August 2003)



Figure 1 Tambo Grande project

In 1999, when the exploratory drilling in the urban area began, the opposition to mining began to mobilize and grew significantly under the leadership of the Tambogrande Defense Front (TDF), an organization present in every zone of the district. The opposition was expressed in meetings organized by Manhattan to explain its activities, and through demonstrations in Tambogrande, Piura and Lima. The population of Tambogrande found support in social and non-governmental organizations in Piura, Lima and internationally, which enable them to organize the June 2, 2002, municipal consultation.²¹⁴

Manhattan has stated that around the world there are several examples of new and existing mines located in established agricultural areas that provide important benefits for the nearby agricultural industries. It has mentioned the Aurilanda and Maria Rosa

²¹⁴ *Supra* note 206 at 4.

gold mines in Brazil, the Niocan project in Canada, and the Chatree gold mine in Thailand, among others.²¹⁵ In response, the Mines & Communities Organization has stated on its web site that all the mines sites enumerated by Manhattan are new and for that reason is not possible to know the long-term environmental impacts. In addition, it indicates that the amount of rainfall received by each mine site and the chemical composition of the minerals of the mines mentioned by Manhattan are different; therefore, the risks of environmental effects over surface and ground water are different as well and cannot be compared.²¹⁶

2.2. Procedure for the authorization of mining projects in Tambogrande.

As was analyzed in Chapter 2, the Ministry of Energy and Mines - MEM, is responsible for the management of mining concessions, the approval of mining explorations and operations and the application of environmental regulations concerning mining activities in Peru.

According to Peruvian mining legislation, before undertaking the exploration of a concession, a mining company must receive authorization from the owners of the surface lands or from the municipal authorities, depending on the area in which the drilling is to take place (private property or rural or urban area). In the case of Manhattan, the authorization was required to be issued by the Mayor of Tambogrande. Before undertaking the development and operational phase of the mine, the company must

²¹⁵ Manhattan Minerals Corporation, News Release, "Successful co-existence of mining and agriculture", (24 February, 2002), online <www.manhattan-mine.com> (date accessed: 20 June 2003)

²¹⁶ Mines & Communities, News Release, "El escenario minero post consulta en Tambogrande, Robert E. Moran, Los ejemplos amargos de Maniata", (June 2002), online <www.minesandcommunities.org?Company/tambogrande1.htm> (date accessed: 20 June 2003)

provide the EIA carried out by a third party.

From the day of publication of the EIA, the MEM has 45 days to make its decision regarding approval or rejection of the operations.²¹⁷ Within the first 20 days of the 45 mentioned days, the National Institute of Natural Resources – INRENA, an agency of the Ministry of Agriculture, reviews the EIA and issues a recommendation that is not binding on the MEM, except when it is a project near or in a protected area (not the case with the Manhattan project).²¹⁸ The MEM then holds public hearings to present the EIA and a summary of it is distributed to interested citizens and groups. Interested citizens and groups are able to express their views at the hearing or by writing to the MEM within two weeks after the hearings. When a rejection occurs, the company may carry out modifications to its proposal and submit it again following the same procedure.

2.3. The mine project in Tambogrande

Manhattan is a junior Canadian mining company based in Vancouver. The company has been present in Peru since 1993 and undertook geophysical studies in 1997 and carried out exploratory drillings during the summer of 1999 (416 holes were drilled in 9 regions). The results of the explorations confirmed the existence of significant gold and silver deposits under part of the town of Tambogrande. In addition, some more deposits were discovered 1 and 13 kilometers south of Tambogrande.²¹⁹

The Peruvian government set certain conditions for operating the mine in Tambogrande. The agreement signed between Manhattan and the Peruvian government in May 1999

²¹⁷ *EPMA*, *supra* note 169 at s.23.

²¹⁸ Supreme Decree 053-99-EM (1999) (date published: 18 September 1999), s.3.

²¹⁹ *Supra* note 206 at 5.

stipulates that a new company, Empresa Minera Tambo Grande, will be created to operate the mine if the conditions imposed by the government are respected. Manhattan would own 75% of the company and Minero Peru, a government-owned company, would own the remaining 25%. One of the conditions is that Manhattan, alone or with a partner, must hold assets of US\$1000 million and that the average processing of the mine must be 10,000 tons of rock per day. Another stipulation states that Manhattan undertakes to use methods and technologies that will not affect the infrastructure of the town of Tambogrande, or harm the population. In addition, tailings must be put in areas that will not cause damage to the surrounding agricultural areas.²²⁰

In 1999, a citizen's organization decided to organized resistance to the mining project. In addition, from the beginning of 2000, the following organizations formed the Tambogrande Technical Support Committee: Comisión Episcopal de Acción Social, Cooperación, Coordinadora Nacional de Derechos Humanos del Perú, Sociedad Peruana de Derecho Ambiental, Asociación pro Derechos Humanos, Coordinadora Nacional de Comunidades Afectadas por la Minería, and the Arzobispado de Piura.²²¹ The desire of the organizations is to emphasize the importance of citizen's participation in the decision-making process affecting the development of their community.

An Environmental Baseline Study – EBS that constitutes a preliminary EIA of the project was made public by Manhattan in July 2000.

In August 2001, Robert E. Moran, an independent hydrologist and internationally recognized expert on environmental impacts of mining, submitted the report “An alternative look at the proposed mine in Tambogrande, Peru”. Oxfam America, The Mineral Policy Center and The Environmental Council of British Columbia commissioned this report, with the aim of providing an independent assessment of the

²²⁰ *Ibid* at 5.

²²¹ *Ibid* at 9.

mining project's potential impacts on water quality and quantity in the region, an issue of particular concern given the importance of agriculture production to the regional economy.²²² This report concluded that the proposed mining project, if approved, would likely have negative, long-term impacts on water quality and quantity, the general environment and possibly agriculture. The report also states that the EBS was absolutely inadequate.²²³

The Peruvian government and Manhattan announced that the EIA was going to be completed by July 2002, and then Manhattan announced that the EIA would be delayed until August 2002. Finally, in December 2002, Manhattan submitted to the MEM and made public the EIA of the Tambogrande project. Manhattan has stated that the EIA is consistent with the environmental and social standards established by the World Bank Multilateral Investment Guarantee Agency. The EIA was prepared by Klohn Crippen Consultants Ltd.

The EIA indicates that the project requires the purchase of 540 hectares of private property being used for agricultural production where an open pit mine will have an ore processing plant, a mine tailings pond and that it will affect a total area of 750 hectares. It also indicates that the project requires the relocation of approximately 8000 residents of the town of Tambogrande, which will be part of a compensation program that includes the construction of residential buildings. Investment in social and economic development in the region is also mentioned in the EIA. In addition, in the TG3 phase, the project will require the Piura River to be diverted. The lifetime of the project is estimated in 12 years. Years 1 to 4 will run an oxide plant for gold and silver processing, and years 4 to 12 will run a sulphide plant for copper and zinc processing. The total period from starting the construction to completing reclamation is estimated at 17 years.²²⁴

²²² *Supra* note 212 at v.

²²³ *Ibid* at vii.

²²⁴ Manhattan Sechura Compania Minera S.A., "Tambo Grande Project Environmental Impact Assessment

In June 2003, Robert E. Moran presented in Piura the conclusions of his independent review of the EIA, on this occasion commissioned by the “Technical Support Committee of Tambogrande”.²²⁵ Robert E. Moran stated that “the EIA is totally inadequate...”²²⁶ “.... it is full of promises and predictions, without organization and with incomplete sections”.²²⁷

At the present time,²²⁸ the Peruvian government is still reviewing the EIA presented by Manhattan.

2.4. Community relations initiative carried out by Manhattan

The Peruvian government has stated publicly on many occasions that the community consent of Tambogrande is a precondition to setting up the mine project proposed by Manhattan.

According to Manhattan’s socio-economic policy, the company is committed to participating in the social, economic and institutional development of the communities surrounding the project and ensuring full community participation and involvement in the financing and implementation of community’s initiatives.²²⁹ In a report that

Executive Summary” (December 2002), online <www.manhattan-min.com/s/ExecutiveSummary.asp> (date accessed: 4 September 2003) [hereinafter EIA, Executive Summary]

²²⁵ Robert E. Moran, *EIA de Tambogrande, Estudios técnicos o publicidad?*, Presentation given in June 2003, in the Municipality of Piura. Document send by e-mail by Robert E. Moran to the author.

²²⁶ *Ibid.*

²²⁷ *Ibid.*

²²⁸ 15 September, 2003.

²²⁹ Power point corporation presentation “Tambogrande Project”. Presentation given by Richard Allan, formerly vice president engineering of Manhattan Minerals Corp, to the author on 27 February, 2003 at Vancouver’s office.

Manhattan sent to an international NGO, the company undertook several community relations and promotion initiatives throughout the period during which exploration work and the EIA were being carried out. The report states that Manhattan has spent US\$1,457,849 for some 50 socio-economic projects in Tambogrande and Piura, ranging from literacy campaigns, the construction of wells, the purchase of a satellite dish and equipment for the Tambogrande television station and funding of pre-university preparatory courses for hundreds of students in the region. Out of that amount, over US\$800,000 was paid as a salary for manual labor carried out by residents of Tambogrande in Manhattan's exploration phase.²³⁰

According to Manhattan there are undertakings carried out with the community, in addition to the resources allocated for social development. The company states that before starting exploration in 1997, consultation took place with the residents of Locuto and Tavera, where the first exploration was carried out. However, according to some members of the municipal council of Tambogrande, the exploration began before the agreements were negotiated, and agreements were signed with some leaders and landowners in the rural communities without the council being formally informed. On November 18, 1999, the Mayor authorized, through Decree 010-99-MD exploratory drilling in the urban area of Tambogrande. In the middle of 2000, Manhattan announced the relocation of one third of the homes in Tambogrande, and in fall of 2000, Manhattan built 6 model homes to show people who would be relocated what the houses would look like.²³¹

Manhattan also disseminated information in the community through a monthly news bulletin for over one year, and at the end of 2000, organized information sessions on the relocation. Manhattan asserts that 70% of the town population was present in the sessions. Manhattan also asserts that in 2001, it held 25 more information workshops.

²³⁰ *Supra* note 206 at 6.

²³¹ *Ibid* at 6-7.

Between January 27 and April 7, 2002, the president of Manhattan wrote weekly letters to the citizens of Tambogrande. The letters were published in a major newspaper of Piura and on the company internet site. Finally, Manhattan paid for a trip to Chile for some leaders of Tambogrande, including the Mayor and the president of the Defense Front, to visit the Candelaria mine near Copiapo, to demonstrate that agriculture and mining activity could coexist.²³²

2.5. Opposition to mining development and opposition to Tambo Grande project

The growing opposition to mining projects in Tambogrande operates in two levels: opposition to mining activity in general (since the presence of the aforementioned French company) and opposition to Manhattan's presence and its practices.

The local authorities of Tambogrande have pointed out that there were irregularities in how mining concessions were granted to Manhattan. According to the legislation in force at the time the concessions were granted, there was an obligation to consult the provincial and the district municipalities on the viability of the exploration activities in the urban area and in the urban expansion area. This step did not occur before the concessions were granted. However, it should be noted that the municipal authorities in Tambogrande had not completed the administrative procedures of identification of urban and urban expansion zones before the concessions were granted.²³³

The central concern of the inhabitants of Tambogrande is the decision-making mechanisms and the possibility of the local population to participate in that process. The

²³² *Ibid.*

²³³ *Ibid* at 7.

population of Tambogrande is extremely concerned about the granting of new concessions in the region, which will mean the elimination of agricultural practices in the zone and the degradation of the environment. They would like to be considered in the decision-making process for granting mining concessions in the area, for preparation of laws concerning the modalities for carrying out exploration work in the region, and for the approval to carry out mining operations in the region.²³⁴

The citizens of Tambogrande perceive the Manhattan mining project as the first step towards changing the development model of the region from agriculture to mining. They are concerned about the social problems that have arisen in other mining zones in Peru (prostitution, alcoholism), the contamination of their natural resources (surface and ground water) and the economic benefits that they will obtain in the long-term.

2.6. Tambogrande Defense Front participation

Defense Fronts are a common form of community organization in certain towns in Peru. Members of the Tambogrande Defense Front (TDF) have indicated that Manhattan's operations in the zone came as a surprise for the citizens. The TDF criticizes the mayor of Tambogrande, Alfredo Rengifo, for having signed the municipal order allowing the company to explore within the town without consulting the population. It is also critical that some of Manhattan's promises to invest in the community (buildings and a sport center) were not kept or were changed as time went on. In 1999, the TDF decided to organize resistance to the mining project.²³⁵

²³⁴ *Ibid.*

²³⁵ *Ibid* at 8.

In the view of the leaders of the TDF, there are serious concerns related with the project. One concern is the relocation of citizens. They criticize the company for not having presented a clear and detailed plan to the community, which has led to uncertainty. As a result, the construction and display of model homes aroused anger instead of interest in many residents.²³⁶ Another concern of the leaders of the TDF is that Manhattan waited almost 4 years before submitting the EIA. The delay has led to speculation and increasing worries about the environmental, social and economic consequences for the district of Tambogrande and the entire Piura region.

The TDF was involved directly or indirectly in several events. On June 2000, leaders of the TDF held a meeting with Manhattan representatives where a document was signed in which the company committed itself to respect the decisions of the population that result from the process of dialogue that should continue from this time onward. At the beginning of 2001, the Mayor changed his position and gathered the signatures of approximately 28,000 citizens (75% of the voters) of Tambogrande demanding the termination of mining activities in the region. This petition was presented to the Peruvian Congress and several public institutions, but did not receive any attention from the State. The Archbishop of Piura, Oscar Cantuarias, publicly stated that he was against the mining project. On February 16, 2001, the municipal council published Resolution 006-2001-MTD-CM to "Respect the will of the residents to oppose the government wish to grant authorization to the mining project in the district of Tambogrande". On February 27 and 28, 2001, Tambogrande residents took part in a demonstration where violent events occurred. On March 31, 2001, the assassination of the community leader Godofredo Garcia Baca increased the climate of tension. The reasons of the murder are not clear, mainly because of the escape of the main suspect. On November 28, 2001, a peaceful march took place in the town of Piura.²³⁷

²³⁶ *Ibid.*

²³⁷ *Ibid* at 8-9.

The TDF and the citizens in general have been supported by numerous social and NGOs from Piura, Lima and internationally. These organizations have provided those opposed to the mining project with valuable tools to expound their critique about the Manhattan project.

Additionally, with the financial support of some NGOs, primarily Oxfam Great Britain and Oxfam America, Dr. Moran's report on the EBS was written and published in August 2001.

2.7. The Robert E. Moran report about the Environmental Baseline Study.

In August 2001, Robert E. Moran, an independent hydrologist and internationally recognized expert on environmental impacts of mining, submitted the report "An alternative look at the proposed mine in Tambogrande, Peru". The report indicates that the Tambogrande community is rich in detailed knowledge about their environment but lacks the scientific expertise needed to effectively evaluate and respond to technical issues and claims put forward by Manhattan. It is also important to remember that there is no prior history of mining in Tambogrande. Thus, to support the ability of Tambogrande to be aware of potential impacts of the project on their water, land and livelihoods, Oxfam America, Mineral Policy Center and the Mining Environmental Council of British Columbia supported a visit to the area by Dr. Moran.²³⁸ In the words of Dr. Moran:

The purpose of this report is to raise and begin to discuss critical environmental and water-related issues from the perspective of those potentially affected, the community. It is intended to provide an independent outside review of the quality of

²³⁸ *Supra* note 212 at v.

the current publicly available environmental information for the Tambo Grande mining project prepared by Manhattan or its consultants.

This report is not intended to instruct the local citizens and regulators as to what to do. It is intended to provide independent technical support to the local citizens and NGOs, and to assist them in determining their own choices regarding their environment and its development.²³⁹

The opinions and observations of Dr. Moran resulted from visits to the Tambogrande area, discussions with local citizens, one driller, University of Pura laboratory personnel, and representatives of numerous local and national NGOs. They also resulted from a review of all publicly-available environmental technical information, and a meeting with senior representatives of Manhattan in Lima.²⁴⁰

As was mentioned previously, a preliminary EIA of the mining project was made public by Manhattan in July 2000. This preliminary document or preliminary report constitutes the Environmental Baseline Study – EBS of the project. The EBS constitutes the first and only substantive environmental document concerning Tambogrande made public by Manhattan since May 1999, when the drilling exploration began.

Dr. Moran states that an EBS, in the context of mining with respect to water, “... is a study that is intended to define, characterize, and quantify the water resources of an area prior to commencement of actual mining and mineral processing activities”.²⁴¹ The studies normally define, in detail, the amounts and quality (chemical and biological) of all surface and ground water present in a study area. Because both water quantity and quality often vary markedly from month to month (and often from day to day), such studies must be quite detailed, and usually involve sampling throughout at least one entire calendar year. Water quantity and quality (both surface and ground waters) can

²³⁹ *Ibid* at 4.

²⁴⁰ *Ibid* at 5.

²⁴¹ *Ibid*.

also vary markedly from place to place. Thus, baseline sampling must also be conducted at a significant number of locations, especially those likely to be impacted by future mining activities. In order to be usable, such sampling must yield statistically valid results.²⁴²

When adequately conducted, a baseline study allows users to perform the following tasks:

- To estimate how much water is available prior to project initiation.
- To compare the pre-mining water quality and quantity with the after mining operation water quality and quantity.
- To anticipate the development of many future impacts to water resources.
- To determine whether changes have been significant and to determine who is responsible.²⁴³

As can be seen, the information provided in a baseline study has significant importance to decision-makers, regulators and environmental mining authorities, to enforce regulations, determine responsibilities and to impose penalties or financial assurance bonds. Dr. Moran indicates that the project

... if approved, is likely to have negative, long-term impacts on water quality and quantity, the general environment, and possibly agriculture. Further, the claims that Manhattan and the Peruvian government have made regarding the lack of impacts cannot be sustained by the analysis and information that the company has provided, to date.²⁴⁴

The report provides that “At the most basic level, Manhattan has failed to adequately investigate and describe the availability of deep ground waters, the quality of surface and

²⁴² *Ibid* at 6.

²⁴³ *Ibid* at 7.

²⁴⁴ *Ibid* at vii.

ground waters and the chemical composition of the rocks to be mined and impacted”.²⁴⁵ It adds, “As a result, it would not be possible to distinguish when water levels had declined, or whether pump yields had been reduced. Information presented in this Baseline Study is inadequate to allow the public to detect future impacts and to assign responsibility for these impacts, if they were to occur”.²⁴⁶

The report concludes that the EBS is inadequate, if judged by the criteria of the British Columbia Environmental Assessment Office, criteria that Manhattan would have to meet if it was proposing such a mine in its home country (Canada). The reasons given are that the evidence provided does not support Manhattan’s assertion that there will not be detrimental environmental impacts. Moreover, water pollution at the site is probable. Whether highly acidic or highly alkaline, the waters leaching from the tailings are likely to contain high concentrations of many toxic constituents such as metals (aluminum, copper, mercury, among others), non-metals (sulfate, nitrate), cyanide and related breakdown compounds (metal-cyanide complexes) and possibly radioactive materials (uranium, radium). In addition, there is significant potential for soil and crop contamination. As mentioned, solid wastes from the mine will contain chemical contaminants, and many will exist as forms mobile in water, capable of contaminating local surface and ground waters. Additionally, the accumulation of waste rocks and tailings will be exposed to local winds, which will carry contaminant dust particles into nearby urban areas, surface waters and agricultural fields. It also concludes that the EBS fails to report any studies that would indicate that Manhattan has evaluated the potential impacts of dramatically increased rainfall that occurs during El Nino events. If the mine facilities failed, it will release highly contaminated wastes into rivers, ground water, agricultural fields, and into the village.²⁴⁷

²⁴⁵ *Ibid* at 9.

²⁴⁶ *Ibid*.

²⁴⁷ *Ibid* at 1-20.

Regarding political and social issues, Dr. Moran concludes that the Peruvian government, with a 25% potential ownership in the project, has an inherent conflict of interest because it is both the regulator and will be the beneficiary from the mine production, and there is a strong community opposition to the project. Local communities are deeply concerned about the threat of potential contamination because they are aware of the social problems that have occurred in recent years at other large mining projects in Peru. The mine operation would require the relocation of numerous families. Some of the short-term impacts could be viewed as positive, such as immediate improve of infrastructure. However, the long-term impacts to the community and environment will be most significant. It is imperative that all of the potential risks and impacts are fully considered. Therefore, Manhattan must provide a full EIA, including a comprehensive and final baseline study and should provide Tambogrande leaders with resources to conduct their own, independent assessment on Manhattan's conclusions. Only with these bases, the population could make an informed decision about accepting or rejecting the impacts of this project on their environment.²⁴⁸

2.8 Municipal consultation

The idea to hold a municipal consultation to gather the opinion of the population on mining development in the region was introduced by the Mayor of Tambogrande and leaders of the TDF. The proposal responded to the urgency of finding a mechanism through which the very strong opposition of most of the population could be expressed peacefully. The Municipal Order 012-2001-MDT-C and Municipal Council Agreement 020-2001-MTD-CM of October 11, 2001, created the "consulta vecinal" (municipal consultation) as a mechanism for citizens participation in the district of Tambogrande.²⁴⁹

²⁴⁸ *Ibid.*

²⁴⁹ *Supra* note 206 at 10.

The Peruvian government reacted by setting up an initiative for dialogue with the participation of the Office of the Ombudsman, which has a high level of credibility with the Peruvian public. The Ombudsman office in Piura invited 18 representatives of various sectors of Tambogrande, including the Mayor and three leaders of the TDF, to a meeting with the MEM and the Minister of Agriculture.

The meeting took place on October 21, 2001, and the Peruvian government formulated several proposals: first, to recognize the importance of maintaining the dialogue between the civil society of Tambogrande and the Peruvian government; second, to reaffirm the need to wait for the EIA to have the detailed technical information and thus complete the evaluation of the impact of the mining project in the region; and third, to hire a group of national and international specialist or a consulting firm selected by the people of Piura, to independently review and analyze the EIA, in parallel with the government evaluation. The government stated that based on this technical information the public of Tambogrande could make a decision.

The government pointed out that its proposals echoed the recommendations formulated by Dr. Moran in his August 2001 report. However, an international NGO stipulates on a report that "After reading the recommendations of the Moran report, we find that only one of them was integrated into the government's proposal, the one in which the public and competent authorities must take knowledge of the EIA before making a decision".²⁵⁰

The TDF officially withdrew from the dialogue process on January 8, 2002, stating that the ultimate aim of the dialogue process was the completion and evaluation of the EIA, and the final approval of mining project; while the TDF objectives were the contrary. Finally, the government manifested its opposition to the municipality holding a municipal consultation stating that was not a legal mechanism under the applicable

²⁵⁰ *Ibid* at 11.

legislative framework to approve or reject a mining project.²⁵¹ The MEM and other representatives of the Peruvian government made public that the population of Tambogrande did not have all the technical and scientific information to make a decision. They stated that the municipal consultation will not be a democratic process because of the lack of information. The government's proposals did not stop the municipal consultation and it took place on June 2, 2002, in a tense and politicized atmosphere.

The municipality of Tambogrande approached ONPE (the Peruvian national electoral agency), and Transparencia (the principal non-governmental electoral observation organization) to obtain the technical and logistical organization of the consultation without success. Because of this, Oxfam Great Britain provided financial support of US\$20,000 to hold the municipal consultation. The municipality hired Mr. Fredy Giraldo Rivera, an electoral consultant with solid experience in the field through working with both the ONPE and Transparencia.²⁵²

The question asked in the ballot was the same as that posed in the municipal council resolution of October 11, 2001, "Do you agree with the development of mining activities in the urban, urban expansion, agricultural, and agricultural expansion zones in the district of Tambogrande".²⁵³ The official results of the consultation are as follows: out of a total population of 36,937 registered voters, 27,015 ballots were issued, a participation rate of 73.14%. The NO side won with 25,381 votes, or 93.05% of the votes, taking into account spoiled or blank ballots. The YES side obtained 347 votes, or 1.28% of total ballots. There were 398 blank ballots or 1.47%, and 88 spoiled ballots, or 3.29%. The abstention rate was 26.8%. Taking into account only the ballots of the YES and NO side,

²⁵¹ *Ibid.*

²⁵² *Ibid.*

²⁵³ *Ibid.*

the NO side won with 98.65%.²⁵⁴ It is important to note that the municipal consultation was not compulsory, in contrast to the official elections in Peru.

2.9 Report of Right & Democracy

Rights & Democracy - R&D (International Centre for Human Rights and Democratic Development) is a non-profit organization with an international mandate. The Canadian Parliament created it in 1988 to encourage and support the universal values of human rights and the promotion of democratic institutions and practices around the world. R&D oversees international human rights standards and promotes democratic development.²⁵⁵ It has supported Peruvian civil society organizations for many years in the fields of human rights education and the rights of indigenous peoples. It has also participated in the joint electoral observation mission with the International Federation of Human Rights during the 2000 general elections in Peru.²⁵⁶

On May 2002, R&D received an invitation from the municipality of the district of Tambogrande to observe the municipal consultation. R&D accepted the invitation and sent a mission made up of two observers, Stephanie Rousseau and Francoise Meloche, to Tambogrande.

According to the R&D report:

The objective of the mission in Tambogrande was to gather the points of view and opinions of the parties involved and factual information from them, in order to analyze the different sides of the conflict and to observe the municipal consultation

²⁵⁴ *Ibid* at 12.

²⁵⁵ Rights & Democracy. International Center for Human Rights and Democratic Development, online <<http://www.ichrdd.ca/frame2.iphtml?langue=0&menu=m02&urlpage=english/about/hist.html>> (date accessed: 10 October 2003)

²⁵⁶ *Supra* note 206 at 2.

process, taking into account the current socio-political context in Peru. The municipal consultation, as a vehicle for citizen participation at the local level, constituted the central point around which the mission structured its work.²⁵⁷

The mission held meetings with the staff of the political, business and cooperation sections of the Canadian Embassy in Lima, the Deputy Minister of Mines of the MEM, the president of Manhattan Sechura, representatives of Tambogrande Technical Support Committee, members of Peruvian NGOs, staff of the Office of Obudsman and Mr. Fredy Giraldo Rivera, the independent consultant on electoral issues hired by the municipality of Tambogrande to organize the municipal consultation.²⁵⁸

On June 2, the day of the vote, the members of the mission observed the opening of the polling stations, the actual voting, the closing of the polls and counting of the ballots, the taking of the results and electoral material to the vote compilation center, the entry of partial results into the computer system and the official proclamation by the electoral committee of the final results of the municipal consultation.²⁵⁹

The R&D reports states that the voting day proceeded normally and peacefully. 8 observers from Transparencia, 3 from Instituto de Estudios Electorales, and about 10 international observers were present and observed the voting process. A few cases of advertising of the NO side were found in the town, in violation of the electoral regulation. In general, the electoral officers carried out their task in an exemplary manner, given the standards observed during presidential national elections. The R&D report adds:

In our opinion, the municipal consultation of Tambogrande took place in a free, democratic and transparent manner, allowing citizens the opportunity to express

²⁵⁷ *Ibid.*

²⁵⁸ *Ibid.*

²⁵⁹ *Ibid.*

their opinion through secret ballot with the effective guarantee that the vote would be counted correctly. The procedures and standards use were more or less identical to those of a Peruvian general election. The high voter turnout and the massive number of NO votes lead us to affirm that most of the population of Tambogrande is opposed to mining development in their region in the current context, based on the information that it had when it voted.²⁶⁰

R&D summarizes two very distinct points of view on the consultation they observed. On one hand, the population and local authorities perceived a need to create a mechanism to allow the public to express its opinions on mining activities in the region, and also perceived the need to create a procedure that allows the population to express their opposition in a peaceful and transparent manner. The large majority felt that a mechanism of adequate public participation is absent in current legislation and that has created instability and uncertainty in the region since mining concessions were granted to Manhattan. On the other hand, for the Peruvian government, the municipal consultation could not stop the mining project in Tambogrande, because the formal framework provides for an evaluation of an EIA as a preliminary condition for the appropriate authorities to come to a decision.

One of the main conclusions of the R&D mission indicates that:

The municipal consultation of June 2, 2002, has illustrated the need for the Peruvian government to proceed with a thorough review of the planning and approval mechanism for development projects, in the mining sector or elsewhere, so that local communities can express their needs and priorities. In addition, the use of territory and exploitation and natural resources should be linked to a process of joint action and planning under the shared responsibility of the central government and a large majority of social and political stakeholders.²⁶¹

Based on the analysis done to prepare the report, R&D recommended to the Peruvian government to publicly recognized the validity and the legitimacy of the results of the

²⁶⁰ *Ibid* at 14.

²⁶¹ *Ibid.*

municipal consultation of June 2, 2002, in Tambogrande. It also recommended legislative reform on citizen participation in the decision-making process regarding mining projects in order to provide a greater period of notice to citizens when invited to participate in public hearings. Also, to provide an adequate time to study the EIA in detail, and to organize several public hearings (with information seminars prior to it) including the locality in which the mining project is to be implemented. All of these should be funded by the State but run by independent experts. Another recommendation was to ensure the coherence of development planning mechanisms at the local, regional and national level. The mechanism by which mining projects are considered and approved should include how these are weighted against development priorities on the local, regional and national levels.

R&D recommended to Canadian government to recommend to Manhattan that it recognize the legitimacy of the results of the municipal consultation of June 2, 2002. Parallel to its role of promoting Canadian investment overseas, the Canadian government has a duty to promote the ethical responsibility of Canadian companies investing in other countries. It also recommended to the Canadian government to continue to cooperate with the Peruvian State for the modernization of standards and mechanism for evaluation and monitoring of mining activities, in order to raise the standards with respect to the environment and human rights impacts on local communities. The final recommendations was to ensure that Export Development Canada develop criteria to evaluate the human rights impacts on local communities of investment projects for which it provides funding.

Finally, R&D recommended to Manhattan to publicly recognized the legitimacy of the results of the municipal consultation of June 2, 2002 and to submit the EIA as soon as possible.

2.10 Environmental Impact Assessment of Tambo Grande project

In December 2002, Manhattan submitted the EIA of the Tambo Grande project. According to the executive summary of the EIA, it identifies the project location, significant infrastructure, duration of the project, the physical dimension and number of jobs the project will create. It also summarizes "...the key characteristics of the zone where the project will be developed, and the potential direct and indirect impacts of the project as well as the measures that will be implemented to mitigate or eliminate these impacts".²⁶²

The EIA stipulates that the project will be developed and operated by a newly incorporated company, Empresa Minera Tambo Grande S.A – EMTG, which will be owned 75% by Manhattan and 25% by Centromin (formerly Minero Peru), a Peruvian government-owned mining company, most of the units of which have already been privatized.

Manhattan has expressed in its EIA that it has the commitment to develop, operate and ultimately close the mining project in Tambogrande with consistent regard for the well-being and safety of its employees and of the inhabitants of the region. Manhattan has stated that it will consistently operate within the bounds of Peruvian law and its regulations, and will exercise internationally recognized good practice throughout its operation.

The commitments enumerated in the executive summary of the EIA include the adoption of an environmental management system at the site compatible with the international standard ISO 14001, to ensure that the company's stated environmental policy is consistently addressed, and the adoption of the best available technology for

²⁶² *EIA Executive Summary, supra* note 224 at i.

environmental control, particularly with respect to water quality and management of mine waste materials.

The EIA also include the local deflection or diversion of the Piura River and the tributary Quebrada Carneros. It states that the diversion dykes are designed to protect the open pit from a major El Nino flood. In regards of the tailings from the mineral recovery process, they will be contained in an impoundment area. All potential acid generating waste rock will also be stored in the tailing impoundment. This is not located in any significant watershed and only minor diversions of surface flows around the impoundment are required. The impoundment will be operated as a zero discharge facility with no discharge to the surface water environment.

Regarding socio-economic aspects, Manhattan's EIA states that the company will follow its development policy, including the commitment to assist the population surrounding the project to meet their current and future needs and to improve their way of life and well-being. In the case of the resettlement of the inhabitants, Manhattan's EIA assures that it is based on the World Bank Operational Policies for Involuntary Resettlement. Community development activities, including the persons who will not be resettled, will be considered. These may include water and sewerage systems, municipal roads, electrification, and drainage systems. Such programs will be subject to the approval of the community and the geographic limitations of the area. Finally, the company commits to protecting its employees from accidental injury and its property from accidental damage or loss according to what it is stated in its occupational health and safety policy.

The environmental impact and mitigation summary section of the executive summary reply to the negative conclusions reported by Dr. Moran on his document about the EBS of Manhattan. For instance, regarding the potential threats for the quantity and quality of surface ground water, the EIA states that all the tailings and any waste rock that has potential to generate acidic drainage will be stored under saturated conditions that

prevent the ingress of oxygen. On closure, an engineered cover will be place over the tailings, which will ensure that enough of the seasonal precipitation is retained within the tailings impoundment to prevent desaturation of the tailings.

2.11 Commentaries of independent consultant Robert E. Moran about the EIA

In June 2003, in Piura, Dr. Moran presented the conclusions of his independent revision of the EIA submitted by Manhattan in December 2002. On this occasion, the Technical Support Committee of Tambogrande commissioned the study.

During his presentation, Dr. Moran expressed his surprise that after more than three years of work, Manhattan has presented an EIA with so many weaknesses. He added that this situation justified the concern of the population of the region, and the institutions that have reviewed the document independently.²⁶³

Dr. Moran has also indicated that the EIA is, in most of its parts, an extensive publicity document in support of the approval of the project, instead of being an independent technical evaluation.²⁶⁴

The presentation given in Piura asserted that the EIA is disorganized and incomplete,²⁶⁵

²⁶³ Factortierra, News Release, "Dr. Robert E. Moran: EIA of Manhattan is totally inadequate", online <http://216.239.39.104/translate_c?hl=en&sl=es&u=http://www.geocities.com/NPCpop/bobmoran> (date accessed: 27 August 2003)

²⁶⁴ Factortierra, News release, "EIA of Manhattan is full of promises and predictions", online <<http://translate.google.com/translate?hl=en&sl=es&u=http://www.geocities.com/NPCpop/bobmoran/ne>> (date accessed: 27 August, 2003)

²⁶⁵ For instance some of the annexes in where would have to be detailed data, is not complete. (I.e. Annexes III, IV, and V of Annex XI).

and that it does not have the intention to inform the public. It also outlined that the EIA does not respond to questions on water availability, its location, or the quality of water now, to the possible impacts related to it, nor about the quantity of water that the mining operation will need.²⁶⁶ The presentation also referred to technical issues regarding the sample methods, geochemical characteristics of the stones and chemical composition of the remainders of the mine during the operation and after closure.^{267 268}

Regarding socio-economic and public participation concerns, Dr Moran's presentation indicated that the EIA does not consider the negative environmental costs finance for social services after the closure of the mine site, that the final document of the EBS of the EIA was not published by Manhattan, and that the EIA does not constitute an independent evaluation (the document was elaborated by a consultant hired by Manhattan).²⁶⁹

The general conclusions of Dr. Moran about the EIA are that it is totally inadequate to evaluate the environmental base-line and the environmental impacts, it does not adequately include the long-term impacts, it minimizes the long-term environmental impacts, and it just presents promises and predictions. There is no discussion about

²⁶⁶ This information is significant because Tambo Grande is the first mining project in the zone, but other mining projects have been proposed.

²⁶⁷ *Supra* note 225 at 7-31.

²⁶⁸ The presentations stated that the EIA presents inadequate sample methods. Various important areas have not been sampled and are not plan to be sampled. The EIA does not summarize the most important geochemical characteristics of the stones that will be mined. Nevertheless, it is evident that a great percentage of these types of stone have a strong tendency to produce acids that is a potential permanent source of polluting agents for water and subsoil. The EIA does not indicate the chemical composition of the remainders of the mine during the operation, or the future reminders of the mine. The filtrations will cause chemical reactions with the solid materials and the quality of the future filtrations will be even worse.

²⁶⁹ *Supra* note 225 at 32-36.

neither the guarantees nor the fulfillment.²⁷⁰

Finally, Dr. Moran has indicated that the clause introduced in Annex XI by the consultant Klohn Crippen is alarming because it is stated that they would not accept responsibility of the damages that could suffer the public because of the use of the information and the opinions of the report.²⁷¹

2.12 Peruvian government review process of the EIA of Tambo Grande project

On August 26, 2003 Manhattan received a resolution from the Director of Environmental Affairs of the Peruvian MEM. The Resolution 355-2003-EM/DGAA states that between September 26 and September 30, 2003, the ministry will announce the timing and location of the public audiences for the Manhattan EIA.²⁷²

According to the Peruvian legislation, the audiences take place 40 days after the formal publication of the dates. A Manhattan press release indicates that during this 40-day period and prior to the actual audiences, a series of public workshops will be conducted in all the regions that may be affected by the project. The workshops will be conducted under established government parameters.²⁷³

The Peruvian government has announced that subsequent to the 40 day period, it will engage in a detailed review of both the ministry's and the public's comments and

²⁷⁰ *Ibid* at 37-38.

²⁷¹ *Ibid* at 6.

²⁷² Manhattan Minerals Corporation, News Releases, "Resolution from Peruvian Ministry of Energy and Mines-Tambogrande project EIA review process" (27 August, 2003), online <www.manhattan-min.com> (date accessed 30 August, 2003)

²⁷³ *Ibid*.

observations regarding the EIA of Manhattan. Manhattan is supposed to respond and make modifications to the project.

According to a Manhattan news release, the MEM has indicated regarding the EIA and the workshops:

An EIA is like a graduation thesis that one submits to the environmental authority, and which, over time, is constructed in an interactive manner, is improved, and the requirements are satisfied until the document is totally approved and submitted, within a deadline of course” “...I would not like there to be any distortion of the idea that the EIA is judged either good or bad, but rather that it consists of documents that incorporate concerns. The document will be brought to community workshops, where new concerns will arise, new questions, and the company will have to satisfy these.²⁷⁴

The aforementioned resolution of the MEM constitutes the last official information made public at the time this chapter of the thesis was finished.²⁷⁵

2.13 Additional commentaries about the EIA of Tambo Grande project

I am a researcher without scientific knowledge about environmental concerns; therefore, I am not going to give my opinion regarding the technical or scientific concerns of the EIA. However, my 8 years of work experience in Peru as a tax attorney working mainly for domestic and foreign mining companies, my academic background in environmental and natural resources law, and my limited academic background in engineering concerns about mining and the environment allow me to present some commentaries of the EIA of

²⁷⁴ Manhattan Minerals Corporation, News Release, “Comments on INRENA preliminary review of the EIA” (20 May, 2003), online <www.manhattan-min.com> (date accessed: June 6 2003)

²⁷⁵ 15 September, 2003

the Tambo Grande project.

The EIA does not show the necessary degree of effort in the management of environmental and community issues that this case requires. Therefore, it does not contribute to the development of an atmosphere of trust between the community of Tambogrande and Manhattan. The EIA is also contradictory. The main concerns of the population of Tambogrande are the environmental and social consequences of the development of mining activities in an agricultural zone. Therefore, it would be logical to expect an EIA that is clear and consistent on these topics. However, in the introduction section of the Executive Summary of the EIA, Manhattan enumerates, among other commitments, the adoption of an environmental management system at the site, **compatible with the international standard ISO 14001**. Surprisingly enough, in the section "Environmental Impact and Mitigation Summary", Manhattan states that it is committed to a high standard of occupational health and safety and environmental protection, therefore **an ISO 14001 certified environmental management system will be implemented**. As can be noticed, Manhattan does not indicate in a clear way what management system will be implemented.

In addition, the EIA does not refer to the amounts and timetable of investment in long-term economic and social development for the region that Manhattan has publicly announced. Moreover, the EIA does not contain any clear proposal respecting the amount of money designated for the purchase of private property necessary to set up the mine, nor financial information about the material compensation provided for the citizens who will be directly and indirectly affected by the mining operations also publicly announced by Manhattan.

The Peruvian government now has to make the final decision. In such a decision, it must consider the interest of the country and the rights and interests of the citizens of Tambogrande and the citizens of Piura.

3. Compania Minera Antamina SA

3.1. General information and facts

The Antamina project has been developed by CMA. CMA is a Peruvian mining company constituted in July 1996, after Inmet Mining Corporation and Rio Algom won the privatization bid and purchased the rights for the exploitation of the previous government-owned mining concessions.²⁷⁶

The Antamina project, currently owned by BHP Billiton Plc, Mitsubishi Corporation, Noranda Inc, and Teck Cominco Ltd, is a \$ 2.3 billion copper/zinc project.²⁷⁷ The mine site is located at 4,200 meters above sea level, east from the Cordillera Blanca, and 20 kilometers from Huascaran National Park (Parque Nacional Huascaran), in the Ancash Department in Peru.²⁷⁸ The Antamina mine is the world's seventh largest copper mine and third largest zinc mine.²⁷⁹

Huascaran National Park was created in 1975, for the conservation of the region's mountain ecosystem and recreation. It covers most of the Cordillera Blanca area. The park is the center of the Biosphere Reserve of Huascaran and has been declared a world heritage site by UNESCO. It is famous all around the world because of its mountains,

²⁷⁶ Compania Minera Antamina S.A., "Estudio de Impacto Ambiental, Resumen Ejecutivo" (March 1998), online <www.mem.gob> (date accessed: 3 September 2003) at 1. [hereinafter EIA Antamina]

²⁷⁷ Steven Botts, Vice President, Environment, Health and Safety of Compania Minera Antamina, "The Antamina Project, the challenge of sustainable development in Peru", unpublished document sent by e-mail to the author on August 27, 2003, at 1.

²⁷⁸ EIA Antamina, *supra* note 276 at 7.

²⁷⁹ Compania Minera Antamina, ed. by Corporate Communication Management, Brochure, "The birth of the Peruvian mine of the future", (2001), at 1.

pre-Inca archeological ruins, and vegetation that includes the endangered Puya Raimondi.²⁸⁰ Initially, the project was going to widen a paved road through the Southern end of Huascarán National Park but finally CMA agreed instead to build a new road. The pipeline that transports the concentrates from the mine to the port facilities does not intersect the Huascarán National Park either.

Thus, the project consists of an open pit mine, a 70,000 ton per day concentrator, a 302 km. long concentrate pipeline, port facilities close to the city of Huarney in the coast, a new access road, power line, and town site. The project is designated to produce up to 1.5 million tonnes per year of copper and zinc concentrates over a 23-year project life. This mega project is the largest project undertaken in Peru and, during its construction stage, was the most important mine construction worldwide.²⁸¹

On March 1998, CMA submitted its EIA to the MEM. For the elaboration of the EIA, CMA hired Klohn Crippen – SVS S.A. an enterprise formed by Klohn Crippen Consultants Limited, based in Vancouver, and SVS Ingenieros S.A., based in Lima.²⁸² After following the legal procedures, the EIA of CMA was approved by the Peruvian government. CMA initiated the construction of the mining project facilities at the beginning of 1999.

During its construction stage, CMA was a client of the auditing and consulting firm where I was employed in Peru. This situation gave me the opportunity to analyze, from the perspective of a tax attorney, the environmental expenses of the project.

CMA developed a resettlement plan for the families of indigenous communities living in the area where the mine site was going to be built. The resettlement plan was based on

²⁸⁰ *EIA Antamina*, *supra* note 276 at 6.

²⁸¹ *Supra* note 277 at 1.

²⁸² *Supra* note 276 at 2.

World Bank guidelines and was designated to minimize the disruption in the lives of the people being resettled while copying and improving their living conditions as well as their health and education situation. During the project's initial development, 53 families were relocated to surrounding villages.²⁸³

Noranda, one of the stockholders of CMA, states:

In response to a report developed by an independent consultant hired by CMA and a visit to residents and local leaders by the Multilateral Investment Guarantee Agency – MIGA, several recommendations for improvement were presented to the investors and CMA. All of which CMA has implemented or is in process of implementation.the suggestions by MIGA were very helpful and reinforced the need for continuous, open and transparent dialogue with the communities.²⁸⁴

On May 2001, Antamina commenced testing operations and reached commercial production on September 2001. It was officially inaugurated on November 2001. The project was completed ahead of schedule and under budget.²⁸⁵

Antamina proudly states that since winning of the privatization bid for the project in 1996, the company has implemented a successful approach to community development and environmental protection based on sustainable development principles. Throughout the development of the project, a number of initiatives have been undertaken to ensure full involvement of the local populations in community development activities and the company's environmental program.

Steven Botts, Vice-President of Environment, Health and Safety, indicates that:

²⁸³ Noranda, "Antamina – Community relations", online: Noranda web page <<http://my.noranda.com/Noranda/Corporate/Our+Business/Copper+South+America/Operations/Antamina.htm>> (date accessed: 27 August 2003), at 1.

²⁸⁴ *Ibid* at 1-2.

²⁸⁵ *Supra* note 277 at 1.

Due to its size, difficult logistics, cultural considerations and financial aspects, the project has faced a number of unique challenges in the area of environmental protection and management of community interaction. Antamina has been innovative in its approach to these issues, and as a result, has set new standards in Peru for environmental and community management, and sustainable development.²⁸⁶

The Antamina project has significant economic benefits for the Peruvian economy. Antamina annual production estimated exports of 675 million pounds of copper in concentrate and 625 million pounds of zinc in concentrate represent a leap in Peruvian mining production and a 30% increase in Peru's total mining exports, with an annual value that will reach an average between \$600 million and \$1 billion, depending on market prices.²⁸⁷ Antamina's operations projected a contribution to Peruvian GDP of 3.4% for the year 2002,²⁸⁸ and within the region of Ancash the GDP is expected to grow by 60%.²⁸⁹

3.2. Social responsibility and community participation

The Peruvian mining authorities and the majority of Peruvian citizens recognize that CMA has adopted internationally accepted practices of social responsibility, incorporating them into the design, execution and management of the project.

In 1999, CMA was formally recognized for its community and environmental work at Antamina during an international symposium organized by Universidad del Pacifico,

²⁸⁶ Ibid.

²⁸⁷ *EIA Antamina*, *supra* note 276 at 5.

²⁸⁸ Augusto Baertl (President and General Manager), "Antamina, from project to operation, economic aspects", online: Teckcominco web page <www.teckcominco.com/presentations/antamina-may2002/economy.pdf> (date accessed: 27 August 2003)

²⁸⁹ *EIA Antamina*, *supra* note 276 at 5.

various NGOs and CONFIEP, Peru's largest private sector business organization for entrepreneurs. In 2000, CONFIEP again recognized CMA for its work in community relations.²⁹⁰

Kawey, a Huaraz based environmental NGO, acknowledges that mining is a risky endeavor and that no company can eliminate those risks 100%, but they are positive that Antamina and Pierina (a gold mine located in Huaraz, exploited by a Canadian mining corporation) are using the highest environmental standards in their operations and are prepare to minimize the risks. For instance, Kawey states that Antamina irritated local environmentalists in 1999 when it became public that the company planned to widen a paved road through the Southern end of Huascarán National Park. However, as was mentioned, CMA agreed instead to build a new road south of the park that will connect the mine to the coastal town of Huarney.²⁹¹

Antamina recognized three principles of social responsibility: The first is the need to obtain a "social license" to operate in harmony with the local communities in the area of influence. Antamina defines "social license" as the consent or acceptance - not necessarily explicit - of an industrial activity by the principal stakeholders, communities, institutions and individuals within the area of influence. It is important to note that the grant of the social license by the stakeholders usually implies that they will receive a real benefit from the development of the project. If the stakeholders do not perceive a real benefit, the social license might be in jeopardy, and may be revoked, either temporarily or permanently. This process can facilitate the resolution of many social issues related to mining operations, and help to ensure business continuity by avoiding major public or

²⁹⁰ *Supra* note 283 at 3.

²⁹¹ ILAFA, "Public, Non-governmental Organizations and Pressure Groups", online: ILAFA web page <www.ilafa.org/socios/3.htm> (date accessed: 28 August 2003), at 3.

government incidents or conflicts. A social license is an ethical approach to project development and should be considered as an investment, not as a cost. The second principle is the 'triple bottom line' that is a concept which includes economic, environmental and social responsibility. These are considered as key components of the business activity. The triple bottom line represents a major change for the mining industry, an industry that has tended to concentrate on the technical aspects of the business, versus interaction with outside stakeholders. This triple bottom line concept requires that environmental and social responsibility concepts be incorporated into key business decisions. The third and final principle is "Stakeholder engagement". Experience has showed that the best strategy for achieving acceptance and support of the project is to interact with stakeholders; that is, to seek to engage the stakeholders in an open and transparent process of consultation and communication, promoting two-way dialogue whenever possible and as soon as possible in the life of the project. A key step in building trust between the company and the surrounding communities is to involve the stakeholders, specially the communities, in decisions that may affect their future.²⁹²

3.3. Application of environmental program

During the development of the project, the partner companies established an Environmental, Health and Safety Policy (EHS) for the Antamina project based on their existing EHS policies. This new policy set the stage for EHS performance throughout the design, construction and operation of the project.²⁹³

Steven Botts states that the environmental program is based in two key areas: environmental impact studies and environmental management programs.

²⁹² *Supra* note 277 at 2.

²⁹³ *Ibid.*

In the case of environmental impact studies, these consist of three baseline studies that address air, solids, water, biological resources and cultural resources within the project area. Possible environmental impacts are identified, and mitigation measures proposed. Other aspects addresses in the studies are closure, reclamation and social impacts. On the subject of public participation:

The consultation process associated with the baseline studies was probably the most intense program of its kind for any type of new project in Peru. It involved public hearings in Lima as well as public consultation in the area of influence. As part of this process, the EIA was widely distributed and provided to any stakeholder wishing to have a copy, also a first in Peru. As a result the communities surrounding Antamina were well informed about the project and its potential impacts prior to construction taking place.²⁹⁴

In addition, site-specific standards are established for air quality, effluents and receiving waters, which in some cases exceeded existing Peruvian standards. The establishment of these standards is required to ensure that there is no long-term significant impact created by the project.

Regarding environmental management programs Steven Botts indicates that these consist of monitoring programs for air quality, ground and surface water, and aquatic life. Also, programs to manage erosion/sedimentation, revegetation and solid waste have been established. CMA has also established an environmental management program based on ISO 14000, and is in the process of implementing this system.

3.4. Economic and long-term effects

The EIA of CMA indicates that the project will contribute to the local, regional and

²⁹⁴ *Ibid.*

national economy. The capital investment for the project is estimated at US\$ 2,200 million. It is estimated that during the 20 years of operation of the project:

- US\$ 3,268 millions will be introduced into the local, regional and national economy by the purchase of goods and services related with the mine, transportation and port facilities.
- US\$ 460 millions will be used to pay salaries of employees.
- US\$ 1,100 million will be paid as income tax to the Peruvian government.²⁹⁵

According to the EIA of CMA, the closure of the mine and the port facilities will mean the identification and elimination of contaminated areas, the destruction of assets and the elimination of harmful and non-harmful wastes. In the mine site, the processed stones that do not produce acids will be re-vegetated. In contrast, the stones that have a strong tendency to produce acids that is a potential permanent source of polluting agents for water and subsoil will be treated. The open pit will be cover by rainwater in a natural process. It is estimated that this will take 75 years.²⁹⁶

Some social, economic and environmental effects will occur after closure. However, due to the incorporation of monitoring and mitigation measures during the development and operation of the project, the long-term effects will be limited. As a result of the Community Development Program of CMA, and the increase of income in the region as a consequence of the construction and operation of the project, there will be an improvement in public health, education and housing. The project will leave the port facilities, new roads and energy.²⁹⁷

The EIA states that the mentioned benefits will allow the region to be prepared for sustainable commercial development. It will also allow the region to be prepared for

²⁹⁵ *EIA Antamina, supra* note 276 at 21-22.

²⁹⁶ *Ibid* at 20-30.

²⁹⁷ *Ibid.*

sustainable development in general, which will constitute the most important legacy of the Antamina project. The community development program seeks to establish sustainable mining communities. CMA indicates that a sustainable mining community is one that could realize a net benefit from the introduction of mining that will last through to the closure of the mine and beyond.²⁹⁸

The EIA of CMA included a commitment to invest US\$ 6.3 million over three years in social and economic development. It is relevant to mention that the report of the observation mission of the Tambogrande municipal consultation process elaborated by Rights & Democracy indicates "Taking as an example the case of Antamina, the largest mine currently in operation in Peru, Manhattan Minerals Corporation's EIA should indicate the amounts and timetable of investment in long-term economic and social development for the region. In fact, Antamina's EIA submitted in 1998 included a commitment to invest US\$ 6.3 million over three years in local and economic development".²⁹⁹

3.5. Protests faced by CMA

The extraction method of CMA utilizes open pit mining followed by conventional grinding and flotation to produce concentrates. The concentrates are slurred and transported by pipeline to the Pacific coast, where they are dewatered for shipment by ocean vessel. With the presence of CMA in the coast of the department of Ancash, inhabitants of the provinces closest to the port facilities; Huarney, Casma, Bolognesi and Huari, have been carrying out protests in regard of environmental and social concerns about the pipeline and port facilities.

²⁹⁸ *Ibid.*

²⁹⁹ *Supra* note 206 at 6:

On March 3, 2000, a strike took place against CMA operations. In September 2000, the fishermen's union of Huarney filed a complaint with the World Bank's Obudsman Office, charging that CMA had failed to inform the community adequately about environmental impacts. The union said it feared contaminants from the processing plant would harm local fish population.³⁰⁰ In June 2001, a few months before the official opening of the mine, Antamina faced new massive protests. The aforementioned inhabitants blocked sections of the Pan-American North highway on May 16, and on June 19 and 20 as part of second 48-hour regional protest declared against Antamina. The settlers and civil organizations of the zones of influence of the mine accepted the blockade of the tracks and deployment.³⁰¹

The citizens of the aforementioned towns asked for the port and the pipeline not to be used because they believe there was a risk of contamination, as has happened in other places where mine development has taken place.³⁰² A specialist of the Defense Front of Huarney, who had analyzed the EIA of Antamina, said that the mine does not inform the community of the chemical components that the treated water will have once the concentrates (made up of copper, zinc and silver) pass through the pipeline until arriving at the port of Huarney. The specialist indicated that it is very probable that concentrate will use heavy metals, which are difficult to treat and could affect the water quality of Huarney. Therefore, the inhabitants of Huarney fear contamination from the pipeline that transport the minerals to the Pacific Ocean, and from a processing plant at the port.³⁰³

³⁰⁰ *Supra* note 291.

³⁰¹ Comisión Técnica Multisectorial (CTM), encargada de proponer los mecanismos para mejorar las difusión de información y participación ciudadana respecto a los compromisos y responsabilidades ambientales de Compañía Minera Antamina en la zona de Huarney, "Informe final – Resolución Ministerial No 149-2002-PCM, Huarney, 12 de noviembre de 2001, at 2. [hereinafter CTM]

³⁰² Eduardo Orozco, "Peru protesters block road over Antamina mine worry", 22 June, 2001, online <<http://forests.org/archive/samerica/prblmine.htm>> (date accessed: 20 November 2002), at 1.

³⁰³ Noranda, New Realises, "Antamina Project." online: Noranda web page

The vice-president of Corporate Subjects of CMA explained that the water of the pipeline will arrive at the port and will enter a processing plant. The treated water will be use for irrigating land. The water will go to a treatment plant and the liquid element will be used for a forestry project of 170 hectare in a formerly desert area. According to the Vice President of Corporate Subjects, no risk of contamination exists, but it recognized the lack of correct information of the population. The company added that the water used to transport the mineral in the pipeline would not be emptied into the ocean but would be treated and used to irrigate a desert region.³⁰⁴ The MEM confirmed the residents that the wastewater separated from the concentrated would not be discharged into the sea but would irrigate a forestry project in the desert, and added that irrigation would not be detrimental to ground water since the ground water was deep enough to avoid contamination.

The citizens of Huarmey, Casma, Bolognesi and Huari stopped feeling worried when the MEM and other mining, fishery and environmental authorities, and the Defense Front of Huarmey and other civil organizations, agreed in the creation of a “Comision Tecnica Multisectorial” (Technical Commission) (CTM). The creation of the CTM has facilitated the debate and analysis of the environmental and social concerns.³⁰⁵ The CTM analyzed the information contain in the EIA of CMA regarding the Antamina project in the Port of Huarmey. The following paragraphs summarize the conclusions and recommendations of the CTM.

The CTM recommended modifications in the EIA and in the addendums of the project with the purpose of increasing the standards in the case of the use of the treated water

<<http://my.noranda.com/Noranda/Corporate/Our+Businesses/Copper/Operations/Antamina.htm>> (date accessed: 20 November 2002)

³⁰⁴ *Ibid.*

³⁰⁵ *CTM, supra* note 301 at 2.

from the pipeline (after the separation of the concentrates) for irrigating land. The main objectives of this recommendation included the study of the composition of the water, the description of the process of treatment of water, the identification of environmental impacts that will occur in the area and the mitigation measures to be adopted by CMA. It also recommended the description of the contingency plan in the case of extraordinary events such as "El Nino", the implementation of better contingency plans for emergencies in the pipeline and in the event of spills of minerals in the ocean, and the closure plan for the forestry area created.³⁰⁶

The CTM expressed in the conclusions and recommendation section that most of the recommendations would be contained in the additional study that CMA submitted to the MEM during the period when the meetings of the CTM were taking place.³⁰⁷ In fact, the CTM stated that the recommendations were incorporated in the additional study submitted by CMA.³⁰⁸

However, in June 2003, the Defense Front of Huarmey organized another strike against CMA. The Defense Front stated that CMA should establish a dialogue with the Defense Front, representatives of CMA and the Municipality of Huarmey in order to evaluate and prevent the risk of harming local fish populations.³⁰⁹ Surprisingly enough, the strike was not covered by the main newspapers in Peru.

During the research done for this section, I did not find more protests against CMA in the area of the pipeline, processing plant or port facilities, nor in the area of the mine site.

³⁰⁶ *Ibid* at 28 - 29.

³⁰⁷ *Ibid* at 28.

³⁰⁸ The additional study of the EIA is not published in the web page of the MEM.

³⁰⁹ ALLPA RUNA Avisos y noticias del medio ambiente peruano, "Cia. Minera Antamina provoca paro indefinido" (June 2003) online <www.unii.net/cgi-shl/allparuna/vocesdetierra.pl?read=88> (date accessed: 28 August, 2003), at 1-4.

Chapter 5 Conclusions and lessons learned

1. The need for Peruvian environmental mining law reform

In the first three chapters, this thesis provided an overview of the mining industry in Peru and the role that the different stakeholders have played in its development, the international environmental standards regarding environmental protection, and the pollution prevention legal tools that are part of mining legislation in Peru. Based on this abstract discussion, this thesis outlines the urgent necessity to improve the Peruvian mining environmental legislation. However, this thesis also illustrates and reinforces the necessity of that improvement presenting two cases studies of mining companies and the environment in the fourth chapter.

This last chapter summarizes the conclusions of each case and enumerates the lesson of these cases for the Peruvian government, mining environmental authorities, mining companies attempting to invest and investing in Peru, and the local communities and indigenous peoples.

2. Conclusions of Manhattan and Antamina cases

The research done to present the Manhattan and Antamina cases in the present thesis has allowed me to arrive at relevant and significant conclusions. These cases have taught valuable lessons to the Peruvian authorities and to mining companies. However, these conclusions and lessons are applicable to all the mining companies, currently investing or attempting to invest in Peru, or in any other developing country with the

characteristics of Peru. With this in mind, I am presenting the conclusions and lessons learned in both cases, in this last chapter.

2.1. Conclusions of Manhattan case

It has been challenging to analyze and describe the Manhattan case in an objective way. It is difficult to be objective when the laws issued by the Peruvian government, who is regulator and potential entrepreneur at the same time, are in favor of a mining project that the majority of the citizens of the area have publicly rejected based on independent technical and scientific information.

The main conclusion is that the social and environmental conflict that has arisen in the Manhattan case is a consequence of the absence of adequate mining environmental legislation in Peru. The Manhattan case illustrates that one of the weaknesses of the Peruvian mining legislation is the absence of an adequate public participation policy.

This absence of adequate legislation has led the local authorities and citizens of Tambogrande to implement a municipal consultation that is legal. My opinion is based in the fact that Municipal Order 012-2001-MDT-C and the Municipal Council Agreement 020-2001-MDT-CM of October 11, 2001, that created the municipal consultation as a mechanism for citizen participation in the district of Tambogrande, are legal as well. They are legal because the *Municipal Organic Law* establishes the responsibility of the municipal authority to promote and define the mechanism of public participation in community development.³¹⁰ In addition, the *Act Respecting Rights of Participation and Control by Citizens* provides for the mechanism of citizen participation at the municipal level without defining the form that mechanism must take.³¹¹

³¹⁰ *Municipal Organic Law*, Law 23853, s.10,79. (1984) (date published: 9 June 1984).

³¹¹ *Act Respecting Rights of Participation and Control by Citizens*, Law 26300, (2001) (date published: 26

The municipal consultation was not created with the intention to approve or reject mining projects in Tambogrande. The Peruvian mining authorities have stated that the municipal consultation is not a legal mechanism to approve or reject of the mine project, and I agree with that statement, but that is not the purpose of the municipal consultation in Tambogrande. It was created with the purpose of providing the citizens with a mechanism to express their opinion in a free, transparent and democratic way. The municipal consultation is a clear affirmation of the desire and right of local communities to participate in significant decisions and play a role in designing the most appropriate form of development in their region.

The Peruvian government has announced that workshops will be conducted before the public hearings of the EIA in all the regions that could be affected by the Tambo Grande project; however, it has not mentioned who will conduct these workshops. In my opinion, the workshops should not be conducted by government officers or consultants hired by Manhattan. Independent consultants with expertise in mining, agriculture and the environment should conduct the workshops. The local community should approve these experts. The concern of the citizens of Tambogrande regarding the effectiveness of the public hearings before the approval or rejection of the EIA of Manhattan is valid. The experience of previous cases has challenged the effectiveness of this mechanism of participation. As was described in Chapter 3, the procedure does not allow public participation in an effective way and the suggestions of the public are not binding for the mining authorities.

Regarding the Peruvian government participation, its impartiality in this case is questionable, not only because it is a potential owner of the 25% of the mining company, but mainly because of the events that have occurred during the conflict and the position that the government has adopted on each one. In addition, the attitude of the Peruvian

government of not publicly recognizing the validity and the legitimacy of the results of the municipal consultation of June 2, 2002, has cut short the dialogue with the citizens that have suffered from instability and uncertainty since the exploration activities began in the town.

The municipal consultation conducted in Tambogrande illustrates that the awareness of citizens and indigenous peoples in developing countries regarding environmental and social concerns, is increasing and challenging the mineral industry. Local communities and indigenous peoples are not playing a passive role anymore.

2.2. Conclusions of Antamina case

The conclusions of this thesis about the Antamina case are based not only on the research done to obtain the information provided in Chapter 4, but also on the environmental behavior and practices observed during the almost two years that I analyzed the environmental expenses of CMA from the taxation point of view.

The main conclusion is that the aim of CMA is to gain, maintain and increase the level of trust within the local communities, and between the communities and the company. For this purpose, CMA has been adopting better practices of public participation, not required by the Peruvian environmental mining legislation. For instance, CMA has conducted studies to know and understand the social and economic standards of the local communities, and has conducted public consultation processes to be aware of the concerns expressed by the citizens. (Both are part of the EIA).

However, while CMA has succeeded in the effort to gain the trust and interact with the communities in the area of the mine site, it has failed in the effort to gain the trust and interact with all the communities in the area of the port facilities and concentration plant. As far as I am concerned, the basic problem is the lack of opportune and adequate

information to the citizens of Huarney, Casma, Bolognesi and Wari.

Without doubt, the economic effort of a mining company to adopt better environmental practices than those required by the domestic laws is an investment and not a cost. In addition, it is just fair to recognize that CMA is doing an effort to complement, not substitute, the obligations of the Peruvian government for reducing the levels of extreme poverty presently existing in the region. For this purpose, CMA avoids paternalistic practices with the local communities. It is trying to supply the tools that the community needs to achieve, through its own effort, sustainable development.

3. Lessons learned

There has been a valuable experience gained in the Manhattan and Antamina cases with regard to achieving sustainable development in the mining industry in Peru. However, as was mentioned, this experience is applicable not only for future mining projects in Peru, but also for mining development in other developing countries.

In the case of lessons for domestic and foreign mining companies investing or planning to invest in developing countries, I agree with what Steven Botts indicates "... the degree of effort required in the management of environmental and community issues is directly related to the complexity and setting of the project".³¹² He also suggests, "The importance of complying with financial institution's requirements with respect to environment and social aspects should be factored into the project. In a developing country such as Peru, these obligations can be greater than those established or enforced by the government".³¹³

³¹² *Supra* note 277 at 5

³¹³ *Ibid.*

In the subject of interaction with the communities the Antamina experience suggests that cultural understanding and sensitivity is a key factor in establishing productive relations between the company and its stakeholders. Studies should start early, and be carried out during the life of the project, in order to build up an understanding of local culture, perceptions about project development, and the level of social capital available to understand and promote sustainable development principles.³¹⁴

In my opinion, Steven Botts also indicate the most important lesson learned: “Develop an atmosphere of trust between the local communities and the mining operation”.³¹⁵ “..... trust is a key component of social capital, a commodity that is critical in the working relationship between the company and its stakeholders”.³¹⁶ The level of trust is usually very low before the arrival of the company. “An increased level of trust can only be achieved through personal contact, dialogue, and participation by the community in decision making, and the following through on its commitments. Once established, trust can be easily lost if the steps that created trust are not followed through”.³¹⁷

The Peruvian government has gained experience and has learned significant lessons as well; now it has the challenge to incorporate the necessary amendments into Peruvian mining environmental legislation. The most important lessons learned are:

- Sustainable development in the mining industry cannot be left to the good faith of the mining companies. The Peruvian government should remove the decision-making process from the mining investors by incorporating the necessary amendments in the mining environmental legislation.
- Some of the most important amendments are:

³¹⁴ *Ibid.*

³¹⁵ *Ibid.*

³¹⁶ *Ibid.*

³¹⁷ *Ibid.*

In the subject of environmental assessment:

- a. The requirement to elaborate a preliminary baseline study, before giving the permission to conduct exploration activities, in the case of areas of high environmental risk, or in areas of traditional or potential agricultural development. The preliminary baseline study should be carried out by an independent consultant.
- b. The requirement to hire an independent consultant to elaborate the EIA. The possibility for the mining company to decide which consultant to hire should be removed.

In the subject of public participation:

- a. The local community, the Peruvian government and the mining company should approve the consultant that will elaborate the baseline study in the case of areas of high environmental risk, or in areas of traditional or potential agricultural development. The mining company should assume the costs.
- b. The local community, the Peruvian government and the mining company should approve the consultant that will elaborate the EIA. The mining company should assume the costs.
- c. The requirement to conduct workshops before the public hearings of the EIA must be implemented. The independent consultants proposed to elaborate the EIA should conduct the workshops. The workshops must take place in all the communities that could be potentially affected by the mining project. The Qechua speaking communities should be able to request a translator.
- d. The mining authorities should consider all the concerns of the local communities expressed in the public hearing, or as a consequence of the public hearings. They should explain to the communities the reasons for the adoption or rejection of those concerns.

In the subject of social and economic development, the requirement to include in the EIA the amount of investment and the timetable for long-term economic and social development should be implemented.

In the subject of pollution prevention, the guidelines containing the maximum

permissible levels of pollution should be subject of a scientific and technical review. The aim should be pollution prevention and not only the mitigation and control of pollution.

- At the risk of being repetitive, I would like to insist that impacted communities should be involved in making decisions that will affect their future. Workshops or forums should be required at different states of the mining project to promote dialogue and planning with regard to community development.

4. Final thoughts

With an adequate improvement in the Peruvian mining environmental legislation, Peru will be able to face the aforementioned new challenges that international environmental laws are imposing to the mining industry and will be able to enhance its economy, the quality of life of its citizens and its environment.

To promote the reform of the Peruvian mining environmental legislation, it is necessary for public and private sector leaders to understand that it is important to rethink their current attitudes. This thesis hopes to encourage public and private leaders to understand that sovereignty over natural resources without considering sustainable development, contrary to promoting economic development, could limit economic advantages in the long-term. I strongly hope that through carefully developed educational programs, citizens, business leaders and government officials will gain an understanding of the direct relationship between sustainable development in the mining industry and their legitimate desire for economic development.

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