ENVIRONMENTAL IMPACT ASSESSMENT FOR NATURAL RESOURCE PROJECTS IN LATIN AMERICA

By

Luke J. Danielson

University of Chile Faculty of Law
Santiago, Chile
Pendleton, Friedberg, Wilson & Hennessey, P.C.
Denver, Colorado

Paper 8

ENVIRONMENTAL IMPACT ASSESSMENT FOR NATURAL RESOURCE PROJECTS IN LATIN AMERICA

Luke J. Danielson[1]

INTRODUCTION

After more than a decade of conflict between those who have seen protection of the world's environment as the most important problem on the global agenda, and those who believe that economic development is the principal key to human progress, there is a broad consensus in favor of the formula "sustainable development." The debate has shifted to the question of precisely what this phrase means.

Reflecting this pairing of environmental protection and economic development, governments worldwide are struggling to create systems of environmental management which are at once effective in protecting the environment and economically efficient.

These national systems of environmental management are generally conceived as consisting of a group of "instruments" of environmental protection or control. In Chile, for example, Law 19,300, the Environmental Framework Law, recognizes education,[2] research,[3] the system of environmental impact assessment,[4] environmental quality norms,[5] the protection of natural areas,[6] classification of wildlife species,[7] emission norms,[8] natural resource management plans,[9] prevention plans in areas where norms are close to being exceeded and compliance plans where they are exceeded[10] tradable emission permits,[11] and others. There are obviously many other instruments in application in one or another country, from compulsory environmental audits, to emission taxes, closure plans, and others.

---

[1]Visiting Professor of Law, Faculty of Law, University of Chile, Santiago, Chile, Of Counsel, Pendleton, Friedberg, Wilson & Hennessey, P.C.

[2]Artículo 6°.

[3]Artículo 6°.

[4]Artículos 8° to 31°.

[5]Artículos 32° and 33°.

[6]Artículos 34° to 36°.

[7]Artículos 37° and 38°.

[8]Artículo 40°.

[9]Artículos 41° and 42°.

[10]Artículos 43° to 47°.

[11]Artículo 48°.

I. THE REQUIREMENT FOR IMPACT ASSESSMENT

The 1992 Rio Declaration on Environment and Development[13] recognizes, in Principle 17, that:

> "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 and are subject to a decision of a competent national authority."

This is by no means the only international agreement which commits signatory states to create and maintain environmental impact assessment systems. For example, Paragraph 1 (A) of Article 14 of the Convention on Biological Diversity[14] requires each Contracting Party, "as far as possible and as appropriate" to

> "Introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biodiversity with a view to avoiding or minimizing such effects, and, where appropriate, allow for public participation in such procedures."

The World Bank, which has had a major influence on the development of environmental impact assessment worldwide, describes its policies in Operational Directive 4.00 (October 1989) which are amplified and described in detail in the Bank's Environmental Assessment Sourcebook,[15] which has been the subject of a long series of Updates dealing with various subjects. Annex A-3, part of O.D. 4.00, lists projects which "normally" require environmental assessment. Item (viii) on the list is "Mineral Development (including oil and gas)."[16]

The reasons for early and widespread adoption of environmental impact assessment as a fundamental part of national environmental management programs will become clearer later in this article. But the recognition of the instrument by international bodies stems at least in part from the fact that it is an instrument which is (I) flexible, and easily adapted to a wide variety of circumstances, (ii) broad, and capable of considering holistically the environmental consequences of a project, (iii) a very effective vehicle for public education and participation, and (iv) easily coordinated with other instruments of environmental management as those are developed.

All this said, one of the most interesting aspects of the development of environmental impact assessment is its variety. In general outline, there is such broad consensus on what the process is that almost none of the agreements or legislation which use the term "environmental assessment" attempt to define it. On this level, there is even something like an international "common law" understanding of what the basic elements of the process are (*e.g.*, base line studies, identification of potential impacts, identification of ways to avoid, minimize, mitigate, or compensate for negative impacts, production of a written document, some form of public participation).

But detailed analysis of the process as it has developed disclose an enormous variation in how it works, its legal implications, and its effectiveness. Study of these differences, and how

---

[13]United Nations Conference on Environment and Development (UNCED), adopted at Rio de Janeiro, 13 June 1992. U.N. Doc. A/CONF. 151/26 (vol.I) (1992), 31 I.L.M. 874 (1992).

[14]Concluded at Rio de Janeiro, 5 June 1992. 31 I.L.M. 818 (1992).

[15]Technical Paper No. 139, (1991).

[16]There is a subsection of Chapter 10 of the Sourcebook discussing requirements for environmental assessment in the mining and mineral processing sector. (Vol. III at 179).

in the U.S. impact statement are not binding on or enforceable against the proponent unless they are incorporated into one of the resulting sectoral environmental permits.[19]

By contrast the newer systems, such as most of the South American systems, conceive of the commitments made in the statement as (a) binding, (b) enforceable, and © having other significant long term legal consequences, such as establishing limits on civil liability to third parties, or a limit on the retroactivity of environmental obligations.[20]

In any case, if EIA is conceived of as a process rather than simply a document, and the goal is "continuous improvement" in the project's environmental performance, rather than just "getting a permit," it is clear that the supposed differences between the two types of systems are not so great as advertised. While the "European" system entrusts preparation of the environmental impact study to the project proponent, in all countries involved in this study, the great majority of the other steps in the process, such as study review and approval, public information and access, public participation, and follow up and enforcement remain in the hands of the public authorities.

Not all countries fit one of these two molds anyway. For example, Brazil, an important mining country, has a system in which the preparation of the study is entrusted to an independent multidisciplinary team, under the control of neither the government ministry nor the project proponent.[21] The government establishes a registry of experts, from which the project proponent can contract the team.

The factors relating to a government's choice among these competing systems are generally fairly straightforward. The principal advantages claimed for the "North American" system are two. First, the basic technical studies which go into the environmental impact assessment are thought to be more "objective" if prepared by the government, or under its auspices, than if prepared by the project proponent.[22] Second, requiring each agency with the authority to issue permits to develop some form of in house environmental capability has been thought to implant an "environmental conscience" in each agency, which may well be better than giving some agencies the idea that they need not concern themselves about the environment, because that is the business of a specialized agency somewhere else in government. It is a way of establishing that environmental protection is everyone's business.

But there are a number of other very pertinent observations:

1. Where the project proponent is itself a government agency, the North American system has exactly the vice it claims to avoid, and worse: the project proponent is in charge of project, and in charge of the studies, and even beyond that, *makes the decision to approve the studies*. While some environmental impact assessments on government projects are well done, a fundamental principle of environmental management is that everyone with a role in the

---

[19]For a discussion of this doctrine and perhaps some exceptions to it, *see* T. McGarity, Judicial Enforcement of NEPA-Inspired Promises, in Symposium on NEPA at Twenty: The Past, Present, and Future of the National Environmental Policy Act, 20 ENVIRONMENTAL LAW 569 (1990).

[20]See, e.g, Article 258 of Argentina's Codigo de Mineria, Decreto 456/97, texto ordenado, *reprinted in* LEGISLACION MINERA ARGENTINA, (Panorama Minero 1997) at 52.

[21]Resolução Conama No. 001, de 23 de janeiro de 1986, Pub. no. D.O.U. de 17/2/86, Artigo 7o. *See also* Paulo Alfonso Leme Machado, DIREITO AMBIENTAL BRASILEIRO, 4a edição(1992) at 148 *et seq.*

[22]See editorial, Slighting Nature in Chile, NEW YORK TIMES, April 29, 1997 at ___.

environmental impact statements would seem unlikely to be approved in the U.S.; in fact the Congress has been unwilling to give EPA the authority to *approve or disapprove* all EISs, let alone prepare them.

The creation of this kind of environmental super-agency has been attempted in Brazil with IBAMA. Although IBAMA does not, as explained above, prepare impact statements, it is heavily involved in the approval process. This structure has been controversial in Brazil.

5.In very practical terms, in all countries with which the author is familiar, the environmental impact study is most often prepared by consultants. Even in the U.S., a principal bastion of the "government prepared" environmental impact statement, an enormous number of EISs are prepared not by government employees, but by contractors or consultants hired by the government agencies.

If we accept the idea that under any system,(1) contractors are going to do the work in most cases, and (2)that the money to pay these contractors is going to come from the project proponent, then the real focus should be on not who does the work, but on what systems exist for control of the contractor's relationships with (a) the project proponent, (b) the government, and © other interested parties. This is a complex and murky subject, outside the scope of this article.

Suffice it to say that such systems of control do exist in most countries. Trying to find this system of control in the various U.S. agency procurement regulations is a real challenge; agency personnel seem often to be inventing the rules as they go along.[26] By contrast, the Brazilian system, with statutory provisions designed to prohibit contractual terms which compromise the independence of the experts hired, regulating their relationships with the government, the public, and the proponent, and providing both civil and criminal sanctions against project proponents, or the experts themselves,[27] for various prohibited acts, is a model of transparency.[28] It at least gets these issues out on the table for clear discussion and analysis.

B. Single Centralized System or Sectoral System?

Some countries have opted for centralizing the environmental impact assessment system in a single government entity responsible for environmental review. The clearest example is CONAMA/IBAMA in Brazil, previously discussed. Others have chosen to put the impact assessment process in the sectoral ministry principally concerned with the project: the energy ministry for petroleum projects, the mining ministry for mining projects, the fisheries ministry for fisheries projects, etc. This is the kind of choice which has been made by Argentina, as one example.

The tensions seem again fairly clear. Individual ministries are often uncomfortable when a new environmental agency takes a key role in controlling what the ministry has always thought were "it's projects." Industry is generally more comfortable with a known sectoral agency with which there are established relationships than with a new environmental ministry, especially if the result is now that *both* ministries have effective veto power. NGOs and environmentalists have on the other hand at times preferred review in an explicitly environmental ministry, feeling

---

[26]One assumption seems to be that because the consultant is nominally hired by the government, there will never be any kind of pressure on the consultant for a particular result, making any regulation of the process unnecessary.

[27]Código Penal do Brasil, Artigo 299.

[28]See Paulo Alfonso Leme Machado, DIREITO AMBIENTAL BRASILEIRO, 4a edição(1992) at 149-155.

not mean that there is no environmental impact assessment in Argentina. It simply means that the process has developed industry by industry under the control of the sectoral ministries rather than as a unified system under the control of the national environmental agency.

The Menem administration has made building a national mining industry a major priority, and has taken a number of steps to achieve that goal, including negotiation of a treaty with Chile for cooperation in mining development in the border areas of the two countries.[36]

As part of this process, the National Mining Code of Argentina was amended in November of 1995 by Law No.24,585 to include a supplementary section entitled "Environmental Protection Law for the Mining Industry."[37] The Law established, among other things, a requirement for approval[38] of an environmental impact assessment prior to the initiation of mineral exploration, exploitation or processing activities.

The 1967 Hydrocarbon Law, Law 17.317, regulates all matters pertaining to exploration, development, production and transportation of hydrocarbons. It did not include any significant environmental component. In December 1992, the Secretariat of Energy, the entity in charge of enforcement of the Hydrocarbon Law, issued Resolution 105/92, setting forth environmental norms and procedures governing the exploration and exploitation stages of hydrocarbon development.[39] The Resolution includes a requirement for environmental impact assessment at each of those stages of development.

Responsibility for the environmental regulation of the natural gas industry is divided between the Secretariat of Energy, which, as noted above, is responsible for the enforcement of the Hydrocarbon Law, and the National Regulatory Gas Entity (ENARGAS). Activities related to the *production* of natural gas are, as noted, subject to the system established by the Secretariat of Energy under the Hydrocarbon Law, including the EIA process set out in Resolution 252/93.

Activities related to *transportation and distribution* of natural gas are subject to regulation by ENARGAS. ENARGAS was created by Law 24.076 in May, 1992 as a consequence of the privatization and deregulation of the National Gas Company. In August of 1995, ENARGAS adopted Resolution 186/95, approving the "Guide of Recommended Practices for Environmental Protection During the Construction of Gas Pipelines," requiring the completion of an EIA prior to the construction of gas pipelines and associated installations, and establishing guidelines for the EIA process.[40]

---

[38]Cuenta Regresiva Para Tratado Minero Con Argentina, 16 MINERIA CHILENA 51 (July 1996).

[37]Law No. 24.585, Amendment of the Mining Code, (Nov. 1, 1995), published in the official gazette Nov. 24, 1995.

[38]There is a debate in Argentina over whether the impact statement need be *approved* before activities begin, or whether it merely need be *submitted*. While it seems to the author, who is not an Argentine lawyer, that the former interpretation is the better, there are said to be some projects which have chosen to move forward without approval of the impact assessment. The issue is clouded further by the fact that at least some provinces have not yet developed regulations, which are necessary to determine which agency is the Authority of Application, the provincial agency the statement is submitted to and reviewed by, and other important issues.

[39]Resolution 105/92, Secretariat of Energy, Nov. 11, 1992.

[40]Resolution 175/95, August 17, 1995, Ente Nacional Regulador del Gas (ENARGAS), "Guide of Recommended Practices for Environmental Protection During the Construction of Gas Pipelines and the Subsequent Operation," See File No. 1088/94 of the Registry of ENARGAS).

Further, one recalcitrant agency could refuse a permit. Under the Chilean system, the approving authority is (at the CONAMA level) a council composed of certain cabinet ministers,[49] and (at the COREMA level) of the regional administrators of basically these same departments.[50]

Since approval of the impact study requires issuance by all agencies of all environmental approvals and permits, a single agency, no matter how strong its opposition to the process, can be outvoted, and forced to yield its permit. There is thus a tight centralization of the process, but not in an environmental ministry. Rather, the process is centralized under the auspices of the political authority.

Chile has therefore successfully created one of the few systems in the world where private project proponents uniformly *want* to do impact assessments.

This rather striking set of provisions will be very interesting to watch in practice, particularly to see whether it can hold together in the face of the pressures which have sectorialized the processes in countries such as Peru and Argentina, and may yet do so in Brazil. It is possible that the first cracks in the unitary system might be seen in two developments.

First, while the law seems to be very clear that all agencies with environmental authority are to be in the process,[51] the regulation, in Article 24, talks about the participation of some agencies in the review as being "optional," and Title VII, which lists the "environmental permits," the granting of which is obligatory when the statement is approved, leaves out some permits of, for example, the Agricultural and Livestock Service. It is not exactly clear what this amounts to in practice. One interpretation is that while their participation in the review process is voluntary, they are still required to turn over their permits on approval.[52]

Second, while the private sector has found much in the system to like, as proven my the very high level of voluntary submission, the public sector was not submitting its projects to any great degree during the voluntary period, and a number of ministries, including some powerful ones, are not happy about having to submit their projects to the vote of a council of other ministers.

C. Federal and Unitary Legal Systems

Some of the Latin American countries have federal structures and some have unitary structures. This distinction can profoundly affect environmental assessment is done.

Where federal systems exist, for example in Brazil, Argentina, or Mexico, states or provinces generally have their own environmental impact assessment systems. There may be issues (as always in federal systems) of whether a project is (1) subject to exclusive federal jurisdiction,[53] (2) subject to exclusive state jurisdiction, or (3) there is concurrent state and federal jurisdiction.

---

[49]Id. Art. 71.

[50]Id. Art. 871.

[51]Art. 8, Par. 2, Art. 24, par. 2.

[52]Christian Cardenas, unpublished thesis, on file with the author.

[53]Article 29 of the Mexican Ley General del Equilibrio Ecológico y la Protección al Ambiente, for example, lists certain projects for which environmental assessment is reserved to the federal government.

In the more developed systems of North America, the Low Countries, and Oceania, it is common to have highly developed sectoral regulations for deciding whether a project requires environmental assessment. In the systems which have two levels of analysis, such as the U.S. system which recognizes both an Environmental Impact Statement, and a briefer, less detailed Environmental Assessment, these regulations also deal with the decision as to whether the brief form of the document or the broad version will be required.[61]

But no set of regulations can deal with every eventuality, or specify every element in a study. When a regulation says that studies should include information on "archaeological resources" or "air quality,"[62] that can take in a lot of territory, and mean a lot of different kinds of studies. It is obviously vital to many actors, including project sponsors, to determine what it is an agency wants.

Some of these types of studies may be relatively inexpensive. Some of them may be quite expensive.

Some approaches may take a long time in gathering data. Other approaches can produce results quickly. There is a great deal of variation in how useful the results are. Some studies produce results that can form the basis of very sophisticated environmental management programs. Others are like sawdust: they may be a kind of filler, which can occupy the pages of an environmental study, but they don't really tell us much.

The real question is: what will the authority require?

This is a concern in two regards. First, if there is no specification or guidance as to what the rules require, the project proponent may become subject to arbitrary approaches, where officials insist on expensive and time consuming approaches which gather a mountain of irrelevant data, at great cost to the sponsor.

Another form this problem takes is that in regions without a great deal of general base line environmental data, authorities have been known to require proponents to gather what really is more properly regarded as general scientific data about a region, rather than data related directly to the project and its impacts. If the latter is a cost of the project, it is properly the duty of the proponent to gather it. But the former is more a responsibility of the public authorities, and should not really be the job of the sponsor. The point is, that in the absence of any clear specification of the details of impact statement preparation, it is harder to ensure that this line is drawn properly.

Second, particularly where project managers are principally evaluated by how fast they can meet various predetermined milestones, and where authorities lack experience and training, the outcome may be a lack of quality in the results, such as base line studies whose principal virtue is that they could be prepared cheaply and quickly, but which have next to no value for environmental decision making.

There is a fear of something like Gresham's Law in the consulting world: that if the authority will accept almost anything by way of baseline studies, inexpensive but valueless work will drive out more expensive but more technically acceptable approaches.

---

[61]See generally C. Wood, Evaluación de Impacto Ambiental: Un Análisis Comparativo de Ocho Sistemas EIA, CENTRO DE ESTUDIOS PUBLICOS, (Santiago, Chile, 1996).

[62]Normas Complementarias para la Implementación de la ley 24.585 de Protección Ambiental para la Actividad Minera, ANEXO III, Art. 9.2.3, reprinted in LEGISLACIÓN MINERA ARGENTINA (Panorama Minero 1997) at 253.

and what is required. This process can benefit all concerned by establishing clearly in advance what will, and will not, be required in various circumstances. While a guide cannot answer all conceivable questions, it can answer a lot of them, and provide a framework in which there is much less guesswork, much less chance of proponents being subject to arbitrary and perhaps unreasonable demands, and less chance that a study will be accepted based on truly substandard supporting investigations.

An example is Peru's system of guidance documents for preparation of impact statements in general,[65] and for specific aspects of preparation of mining project studies, e.g., mine closure planning.[66]

The process of developing such a guidance document, if done transparently, can be an excellent opportunity for much needed dialogue among industry, regulators, and other interested institutions.

IV. EXISTING PROJECTS

In countries where the impact assessment system is a lynchpin of environmental management efforts, the impact statement, as noted, may play important roles in setting emission limits for emissions which are not subject to national standards, fixing the limits of civil liability, or setting benchmarks for monitoring and compliance.

Since presumably existing facilities share at least some of these concerns and needs, there is an obvious question: in a country with a very limited number of emission or quality norms, and very little in the way of monitoring requirements to generate basic information about environmental conditions on a project site, what is to be done about existing projects?

One approach is that taken by Peru. In Peru, the competent authority can, under the code, require a project which has not previously been assessed to submit to an environmental impact assessment. There is a requirement for a *Programa de Adecuacion y Manejo Ambiental,* or "PAMA," for existing facilities.

When the impact assessment regulations for the mining sector were adopted in Peru, existing operations were given a period for going through the assessment process and submitting PAMAs.[67]

Chile has taken a very different approach, quite similar to the U.S. system: environmental assessment is only required for new projects and "modifications" to existing operations.[68]

Another approach is to require existing facilities to begin regular environmental audits, even though they may not have to submit to a full environmental impact evaluation. This appears to be the case in Argentina.

---

[65]In the case of Peru, see the GUIA PARA ELABORAR ESTUDIOS DE IMPACTO AMBIENTAL, SUB-SECTOR MINERIA, Dirección General de Asuntos Ambientales, Ministerio de Energia y Minas, (September 1994). Argentina has a very comprehensive 1987 manual for environmental management of major hydroelectric projects.

[66]GUIA AMBIENTAL PARA EL CIERRE Y ABANDONO DE MINAS Dirección General de Asuntos Ambientales, Ministerio de Energia y Minas, (1995).

[67]See GUIA PARA ELABORAR PROGRAMAS DE ADECUACION Y MANEJO AMBIENTAL, SUB-SECTOR MINERIA, Dirección General de Asuntos Ambientales, Ministerio de Energia y Minas, (February, 1994).

[68]Ley de Bases, No. 19.300, Art. 8.

What is studied? Only the 2% of "new" dust triggered by the modification? How can the impact of the "new" dust be sensibly studied without evaluating and defining the impacts of the "old" dust? What is the base line for dust?[71] Does the COREMA have power to condition approval of the environmental statement on control of the "new" dust, but have no authority to impose any conditions related to the "old" dust? What if the costs of control of the "new" dust are very high, but the costs of control of dust from some of the other sources are much lower?

Whatever the resolution of these issues, it is probably true that it is more effective and efficient, where older facilities which have never been subject to EIA have environmental problems, to do some kind of overall study, such as an impact assessment, rather than a focus solely on one or two variables.

V. MINERAL EXPLORATION

In a number of countries, there is a good deal of discussion of how mineral exploration should be subject to requirements for environmental assessment. In Chile, among the "projects" which are subject to assessment are "[p]rojects of mining development, including those of coal, petroleum, and gas, including prospecting, exploitation, processing plants, and disposition of wastes and overburden ... ."[72]

But this has led to a good deal of concern, as "prospecting" has generally been thought of very broadly in Chile. To take an extreme example, if a Canadian mining company in Vancouver is reviewing satellite imagery from a U.S.-launched satellite which passes over Chile, while this might be considered "prospecting," it is not clear exactly how environmental assessment of this activity should take place, or why. The benefits of requiring environmental assessment for aerial magnetic surveys, or the itinerant prospector are not clear, though the law as written does not appear to except these activities.

And prospecting, even when on a large scale, where environmental impacts are clearly relevant, is an inherently dynamic process, in which the results of early steps may have a great deal of influence over the later steps.

Some types of prospecting activity are very difficult to manage in environmental terms using impact assessment as the tool: they are dynamic, and they are diffuse -- conducted in various locations over a relatively large area, sometimes by a variety of actors. This does not mean that these activities have no important impacts. Indeed, in something like a gas pipeline project, the impacts of exploration for gas supplies in the pipeline area may be greater than the impacts of the pipeline itself. But it may be that at least some of these activities are better managed through use of standard terms and conditions, and/or a requirement for reporting or monitoring to demonstrate that the basic environmental conditions have been met.

In addition, there has been a great deal of concern in Chile over the relationship of environmental assessment to the mining concession. If a company has only two years to explore, it may lose a big part of this period to the environmental assessment process, which

---

[71]See Reglamento del Sistema de Evaluacion de Impacto Ambiental, Art. 12 (f).

[72]Ley 19.300, Article 10 (I). Of course, the fact that a project is subject to assessment does not tell us whether it requires a full environmental impact study, or the much briefer and less elaborate declaration of environmental impact.