



**OECD GLOBAL FORUM ON INTERNATIONAL INVESTMENT**  
**Conference on Foreign Direct Investment and the Environment**  
Lessons to be Learned from the Mining Sector

**7 - 8 February 2002**

*OECD Headquarters, 2 rue André Pascal, 75775 CEDEX 16, Paris, France*

**Discrimination and Non-Discrimination in Foreign Direct Investment**  
**Mining Issues**

**Konrad von Moltke**

**Senior Fellow**

**International Institute for Sustainable Development**

## **Executive Summary**

Fully documented cases of discrimination in foreign investment are rare, even though it must be assumed that cases of discrimination are in fact numerous. To understand the underlying issues and dynamics it is important to recognize that discrimination in foreign investment involves a number of factors that distinguish it from discrimination in trade in goods:

- The theory of comparative advantage does not apply to the liberalization of foreign direct investment;
- Discrimination typically involves a single private investor on the one hand and a state on the other. This impacts not only the dynamics of the relationship but also the willingness of either party to document the outcome;
- Investors acquire continuing rights in the host country, becoming economic citizens. This further impacts the relationship between investor and host country authorities;
- Productive investments are dynamic over long periods of time;
- Discrimination can occur at the time of an initial investment or later.

These complexities are particularly pronounced with respect to extractive investments, in which the natural environment is by definition a factor of production.

This paper discusses a documented case of discrimination against foreign investors in the mining sector in Chile. It identifies a number of factors that may impact the investment under conditions of discrimination and some of the factors that may come into play in response. It then identifies the environmental issues that may need to be taken into account.

Based on this discussion the paper suggests that a high degree of institutional capability is needed to balance private rights against public goods.

## **1. Discrimination and Non-Discrimination in Investment**

### ***1.1. Theory and Practice of Non-Discrimination in Investment***

The promotion of “non-discrimination,” the treatment of foreign investors like domestic investors under like circumstances, is one of the fundamental goals of any international investment regime. This would suggest that cases of discrimination are well documented and have been shown to produce results that are undesirable from the perspective of public policy. In practice this is not the case. Attempts to document discrimination and to assess the benefits of “non-discrimination” encounter surprising difficulties in both theory and practice.

Presumably a government that is discriminating against a foreign investor has little interest in advertising that fact. Similarly the individual investor is more likely to maintain confidentiality about negotiations with a particular government. The incentives to do so are numerous. Future relations with the government are at stake. Competitors may derive useful information from such disclosure. Measures adopted to overcome discrimination may not bear public scrutiny, for example because of corruption. And in the end the very fact that an investment has been made suggests that it will be profitable, indeed chances are more profitable than investments made in an open market, so the investor is unlikely to have an interest in disclosure and has no grounds for complaint. Documenting investments that have not been made is, however, problematic since disclosure is rare and disclosure that does occur is partial and partisan in nature.

In the trade regime it is possible to rely on the negotiations between governments that typically accompany claims of discriminatory behavior, and ultimately on the dispute settlement process, to generate useful information concerning the issues that are postulated. No such negotiations occur in relation to individual investments, certainly not in the public domain.<sup>1</sup> The dispute settlement process rarely provides the necessary documentation about discriminatory behavior. The International Center for the Settlement

---

<sup>1</sup> This has even been the case with regard to one of the most visible cases of discrimination against FDI, the treatment of Enron by a state government in India.

of Investment Disputes (ICSID) now lists disputes on its website but provides no further information. Disputes under UNCITRAL are not even announced publicly<sup>2</sup>. A number of disputes have become public knowledge within the context of the North American Free Trade Agreement (NAFTA), and then only over the vigorous resistance of the private parties, and despite the failure of the government parties to create the institutional mechanisms provided by NAFTA to permit rudimentary information about such disputes<sup>3</sup>. The NAFTA disputes raise numerous important issues concerning foreign direct investment agreements but they do not provide useful information concerning discriminatory behavior in relation to mining<sup>4</sup>.

“Discrimination” is a well-defined concept in relation to trade in goods. It is underpinned by the concept of “comparative advantage,” which postulates that the removal of discrimination will tend to benefit all parties concerned. This creates a solid theoretical foundation for the liberalization of trade in goods. Attempts to critique this foundation, in particular from an environmental perspective, have not succeeded in undermining it<sup>5</sup>. Starting from this foundation, the economic consequences of discrimination can be calculated and the economic advantages of non-discrimination unambiguously established.

The theory of comparative advantage does not, however, apply in the same manner with respect to foreign direct investment where capital is committed in exchange for certain rights. Some countries have a surplus of capital and some do not, and there is no reason to assume that the relationship will be reversed by the process of foreign direct investment. The justification for eliminating discrimination with respect to investment lies in the increased efficiency of the allocation of a scarce resource—capital—and in

---

<sup>2</sup> International Institute for Sustainable Development, *Private Rights, Public Problems. A Guide to NAFTA's Controversial Chapter on Investor Rights*. Winnipeg: IISD, 2001 (also available at <http://www.iisd.ca>, pp. 42-44.

<sup>3</sup> *Private Rights, Public Problems* (see fn. 2) provides a list of known disputes, pp. 69-110.

<sup>4</sup> The one case concerning forestry—Pope and Talbot vs. Canada—has recently been decided. It concerned the allocation of export quotas and was ultimately decided on the basis of the discriminatory behavior of an individual official.

<sup>5</sup> Herman Daly, “The Problems with Free Trade: Neoclassical and Steady-State Perspectives,” in: Durwood Zaelke, et al., *Trade and the Environment. Law, Economics, and Policy*. Washington, DC: Island Press, 1993, pp. 147-158.

making risk and return more reliably calculable, subject to market forces. This does not provide a reliable guide to the distribution of benefits associated with a liberalized international investment regime. Ideally both parties—the investor and the host country—will benefit, but this outcome can generally only be achieved by a process of negotiation as the specific circumstances of an individual investment are balanced against its potential costs and benefits from the perspective of the public good.

It seems almost self-evident that non-discrimination in foreign investment is a desirable goal of public policy. Nevertheless defining and implementing non-discrimination proves to be a complex task, notably more difficult than ensuring non-discrimination with respect to trade in goods<sup>6</sup>. Extractive investments often involve several interdependent elements, each of which can present significant technology choices. Foreign investors enter into private contracts with host country private actors, whether these are other investors, employees or suppliers. They also acquire rights and obligations in the host country, which gives the relationship of the investor to host country public parties a quasi-contractual character. All of these factors must be taken into consideration when constructing a regime to promote non-discrimination in investment.

Extractive investments pose a particular set of problems. By definition, they occur in the natural environment, which becomes a necessary factor of production even while it retains its character of public good. Extractive investments are typically medium to long term in nature. This introduces a significant temporal dimension. To achieve non-discrimination it is necessary to address issues that arise at the time of the initial investment but equally issues that may arise over the lifetime of the investment. The resultant relationships can run to decades and involve the modification of virtually every aspect of the initial investment and its legal structure.

When public goods are affected by foreign direct investments—as they generally are when long-term productive investments are being made—it becomes necessary to weigh

---

<sup>6</sup> Similar difficulties exist with respect to trade in services, which involve several variables not found in trade in goods. Hoekman, fn. 2 above.

these against private interests of investors. Most countries maintain an elaborate institutional structure (involving i.a. constitutional safeguards, administrative rules of procedure, transparency and public participation provisions, and the judiciary) to ensure an acceptable level of non-discrimination between competing domestic investors and to secure the appropriate balance of private rights and public goods. The first and most obvious step towards an international investment regime based on non-discrimination is to ensure that this institutional structure is available in a non-discriminatory manner to foreign investors.

The second, equally obvious, step in constructing such a regime is to promote the development of needed institutions within participating countries and to ensure that international rules do not undermine domestic institutions when these function in a legitimate manner consistent with the goals of the international regime.

The entire domestic institutional structure to ensure non-discrimination will be affected by the introduction of new international investment rules. This imposes a demanding standard of institutional capability and legitimacy on the international regime if its decisions affect a balance of interests that has been struck domestically.

Taken in this perspective, non-discrimination in relation to foreign direct investment means that the interests of a foreign investor and the public interest in an investment will be weighed in a manner that is legitimate, transparent, and accountable, and in accordance with same rules, criteria and procedures that apply to domestic investors.

It is hard to argue that “discrimination” provides economic benefits or represents an acceptable basis for public policy, yet the making of legitimate distinctions in a manner that is transparent and accountable is a central function of public policy when faced with alternative uses of scarce resources and it is not a simple matter to distinguish between the legitimate exercise of government authority and discrimination. Not all investors are always treated the same way, even under comparable circumstances. A 1984 study of environmental permits for coal fired power plants in Germany and the Netherlands—one

of the most mature technologies so that facilities are widely presumed to be comparable—discovered that virtually none of the licenses was directly comparable to the others. Numerous factors intruded to make each facility and its environmental license unique<sup>7</sup>.

The problem is that “discrimination” and “non-discrimination” are not polar opposites in a static system. Most long-term foreign direct investment will involve certain forms of behavior that can be characterized as “discriminatory” even though it is perfectly legitimate.

Trade in goods, trade in services, and foreign direct investment are distinct forms of economic activity. All are liable to benefit from creating an environment that is “non-discriminatory.” Yet there will be differences in the theory underpinning efforts to achieve non-discrimination, in the nature and distribution of the benefits and in the institutions required to achieve this goal. It is reasonable to assume that discriminatory behavior in trade in services and foreign direct investment will have undesirable economic effects, as does discrimination in relation to trade in goods. Yet the theory underpinning the process of liberalization in the services area<sup>8</sup> and in relation to investment is significantly less robust. It rests on the inefficient allocation of scarce resources and opportunities for the creation and capture of rents. The hypothesis is that a non-discriminatory investment regime will promote more efficient allocation of a scarce resource—capital—and reduce opportunities for the creation and capture of rents.

Lacking a framework as robust as that created by the theory of comparative advantage, discrimination in foreign direct investment raises significantly more complex issues

---

<sup>7</sup> Konrad von Moltke, et al., *Rechtsvergleich deutsch-niederländischer Emissionsnormen zur Vermeidung von Luftverunreinigungen Teil 1: Bundesrepublik Deutschland; Teil 2: Niederlande; Teil 3: Tabellen.* (Teil 1 also in Dutch: *Rechtsvergelijking van duits-nederlandse emissienormen ter bestrijding van luchtverontreiniging*) Bonn: Institute for European Environmental Policy, 1985.

<sup>8</sup> Hoekman, Bernard, “Assessing the General Agreement on Trade in Services,” in Will Martin and L. Alan Winters, eds., *The Uruguay Round and the Developing Countries.* Washington, D.C.: The World Bank, 1997, p. 92: “The nonexistence of tariffs as a restraint to trade greatly complicates analysis of or negotiations on incremental reductions in barriers to services trade. Analysis requires an estimation of tariff equivalent of a given set of measures and regulations pertaining to a service activity. Little work has been done in this connection.”

concerning the balance of advantages and disadvantages, in particular the balance of private gains and public costs. As a consequence, definition and application of the concept of non-discrimination involves a range of policy considerations that do not need to come into play when considering trade in goods. These considerations are heightened by the long-term nature of productive investment and by the fact that foreign investors acquire continuing rights, essentially becoming economic citizens of the host country.

In practice, many investments exhibit a number of specific features, relating to the investor, the investment, the economic, social and environmental conditions, and to the regulatory environment that exists at the time of first investment and throughout the subsequent life of the investment. Consequently case studies may be expected to document this diversity, as well as demonstrating certain general principles of economic policy. This is particularly true in relation to extractive activities of any kind—mining, agriculture, forestry and fishery—that actually occur in the natural environment.

rents. In the process the environmental consequences and the specific circumstances of commodity production have been lost from view. Thus for each bushel of corn produced in Iowa at least one bushel of topsoil is lost. Yet there is no mechanism that reflects such costs—or other factors that do not have a market price—in the determination of corn prices. The challenge facing policy makers (and the trading system) is to protect the allocative functions of international commodity markets while providing adequate safeguards for the environment. In the meantime many varieties of crops that used to have local markets can no longer be grown economically for lack of a market and risk being lost.

Many commodity markets are characterized by their ability to eliminate rents. Yet from the perspective of an individual actor it is the existence of rents that permits the generation of excess profits. Much economic policy is, indirectly, concerned with permitting or repressing the creation of such rents. Intellectual property rights have become the source of large monopoly rents, justified at least to a certain extent by the need to promote innovation. Yet striking a balance between creating incentives for

innovation and maintaining essential goals of public policy—access to health care or environmental protection, for example—is also difficult and conflict-ridden. At the present time, those who exploit intellectual property have a manifest economic advantage over those who exploit natural resources.

### ***1.2. The Circumstances of Extractive Investments***

Industrial production involves the control of the production process so as to render it replicable irrespective of location. Since the early 19<sup>th</sup> century that is the central principle underlying the industrialization process. Frequently this involves an enclosed location that shields the process from the vagaries of environmental influences. Environmental factors—raw materials, air, and water in particular—are inputs. Wastes—disposed in the form of emissions or as an unwanted residue of the production process—are outputs to the environment. Strategies to minimize inputs and outputs can decrease the environmental impacts of industrial production dramatically. In general, industrial facilities can be compared with one another with a view to determining which are “like”, provided variations in technology and the environmental impact of waste disposal are taken into account.

The circumstances of production in the natural environment, generally of commodities, are quite different. Efforts have been made to replicate the industrial process in commodity production began almost at the same time as industrialization itself. Yet there are limits to this process because the environment itself is a key factor of production and the success as well as the comparative advantage of a production unit depends vitally on environmental conditions. These may be modified, for example through fertilization and pest management techniques, or through industrialized livestock operations. At the extreme, agricultural production has moved to greenhouses and holding pens that are more comparable to industrial facilities than to traditional farms.

In an extractive investment, environmental factors impact on the activity itself and not only on its inputs and waste outputs. Many forms of resource extraction—mining, farming, forestry, and fisheries—have environmental requirements that are inescapable

and consequently have environmental impacts that reflect the specific environment in which they operate. The location of a mine is determined almost entirely by the location of commercially viable ores. Presumably operators would not choose to locate mines in environmentally sensitive areas, or where water is scarce, but ultimately they must bend to the reality that useable ores are only found in specific locations.

Variations in environmental conditions can affect the circumstances of production dramatically, even when the resulting products are “like.” Governments must take these variations into account, as must any attempt to determine what constitutes “like circumstances” where investments in commodity production are concerned.

The complex relationship between extractive activities and the natural environment also bring public authorities at all levels into play. Protecting public goods—public health or the environment, for example—is a central task of public authorities. Any activity that impacts the environment will attract the attention of public authorities that will find themselves confronted by the need to balance the private rights of investor against the public goods that they are responsible for. As a consequences the opportunities for “discrimination” also multiply.

## **2. Mining and the Environment**

Mining has attracted a great deal of attention on account of its environmental impacts, which can be obvious locally, and on account of the hazards associated with some its products, which can be widespread and insidious.

The mining industry involves approximately 150 distinct extraction activities, ranging from coal to copper, from iron ore to cobalt, and from talcum to titanium. Each of these activities exhibits particular circumstances as to the process involved, the distribution of extraction and processing, and the relationship of mines to international markets. Each of these in turn has a range of environmental implications.

The non-ferrous metals mining industry in particular is characterized by its international structure. Foreign direct investment has been an integral part of the industry for more than a century. On the other hand the coal industry was long regarded by countries as a strategic national asset. It was essentially closed to foreigners, and the resulting structures of discrimination have been dismantled haltingly. It is consequently difficult to generalize about discrimination in the mining industry—and the introduction of rules to promote non-discrimination are liable to have widely differing impacts, depending on the particular activity involved.

Generally the extraction of ores is but the first step in a process of transformation that is essentially industrial in character, but it would be artificial to separate operations that cannot exist without one another. Through thermal, physical, chemical or even biological processes the ore may be concentrated and purified until a useable commodity is produced. In most mining product chains the distribution of the resultant activities is determined by a combination of environmental, geographic, and economic factors. Thus Chile exports copper ore, intermediates, unrefined and refined copper because transport is accessible (at least in some locations) and energy not particularly inexpensive. Zambia at the other extreme can export only refined copper because transport is difficult and expensive.

Mining rights themselves are subject to widely differing legal regimes, ranging from full private control under private land and free private access under public land and to public control of all minerals in the soil, whether under public or private land. These differences are historically determined. While the principle of non-discrimination can be applied irrespective of the legal regime, this requires lesser or greater adjustment depending on the prior position. In a free access regime, the public interest is limited to avoiding ancillary costs such as environmental degradation. In a regime based on public ownership of mineral rights there is a need to compensate for that public ownership interest, creating complex opportunities for discrimination, corruption, or other forms of rent appropriation—in addition to the distribution of ancillary costs.

Large mines are typically integrated into international product chains. The development of a large mine requires substantial amounts of capital. Many years may pass before there is any return on the initial investment. Such investments are not undertaken without some assurance that the resulting output will find buyers at prices that cover costs. Marginal output may be sold at variable prices, often providing a major contribution to ultimate profitability. Consequently the ability to integrate a mining operation into international product chains represents a critical source of competitive advantage. It is largely restricted to multinational corporations that undertake foreign direct investment.

Small mines on the other hand represent a special challenge from the perspective of sustainability<sup>9</sup>. They can play a role on the expanding fringe of mining. In some instances, prospecting and initial development is undertaken by small enterprises that seek large returns on high-risk ventures. Once a viable operation has been proven, larger mines that are capable of dealing with international markets move in and take over. The problems associated with controlling small exploratory mining operations are particularly acute and their impacts locally can be devastating.

There have been several approaches to the development of a code of good conduct in mining. The earliest attempts were sponsored by the United Nations Environment Programme<sup>10</sup>. Subsequently several leading mining companies that were participating in the UNEP effort founded the International Council on Metals and the Environment (ICME), which has generated a significant body of research and opinion<sup>11</sup>. Most recently an initiative on Mining Minerals and Sustainable Development (MMSD) has been commissioned by the World Business Council for Sustainable Development at the International Institute for Environment and Development<sup>12</sup>.

---

<sup>9</sup> Chaparro, Eduardo, *La llamada pequeña minería: un renovado enfoque empresarial. (recursos naturales e infraestructura 9)*. Santiago: CEPAL, 2000.

<sup>10</sup> <http://mineralresourcesforum.unep.ch/>

<sup>11</sup> <http://www.icme.com>

<sup>12</sup> <http://www.iiied.org>

It is difficult to separate mining from the subsequent processing, use and disposal of minerals—some of which involve serious environmental problems. Once mined and processed, the fate of minerals can involve highly complex environmental processes but ultimately all minerals entail a continuing risk of release to the environment where they can represent hazards that are difficult or impossible to control. These hazards are linked to the physical properties of the mineral in question and its ability to migrate, accumulate, or be transformed in the natural environment. Thus the environmental hazards of lead are related to its low mobility and the resultant risk of accumulation<sup>13</sup> while the hazards of cadmium arise from the high degree of mobility that can lead to the presence of cadmium in locations far removed from even incidental emissions of the substance<sup>14</sup>. Many metals entail significant environment and human health hazards, and these can only be adequately controlled by an integrated approach that addresses all phases of the metal product cycle, from mining to disposal.

The mining phase itself generally presents primarily local or regional environmental impacts, but at that level they can be highly significant.

Every environmental issue that can be raised in relation to mining also presents a risk of discriminatory actions by public authorities. Taken together these issues represent a complex system of interactions between the (private) mining operation and the environment, which represents a public good. Actual practice in a specific mining operation will range from largely uncontrolled environmental impacts all the way to largely controlled impacts that hardly extend beyond the boundary line of the mining operation. The determination of where a given mining operation will be situated on this continuum depends on a large number of factors that reflect the characteristics of the mine, local environmental conditions, technological variables concerning the availability of control strategies, the economics of environmental control, market incentives from the

---

<sup>13</sup> Konrad von Moltke, *Possibilities for the Development of a Community Strategy for the Control of Lead*. Bonn: Institute for European Environmental Policy, 1987

<sup>14</sup> Konrad von Moltke, *The Regulation of Existing Chemicals in the European Community--Possibilities for the Development of a Community Strategy for the Control of Cadmium*. Bonn: Institute for European Environmental Policy, 1985 (Published: Brussels: Commission of the European Communities, 1986).

product chain and the desire and ability of the relevant public authorities at several levels to impose controls and to ensure that these are respected. Many of these variables are liable to change over time, again reflecting several more or less independent factors such as prior demands on environmental resources, changing perceptions of environmental risks, development of institutional capabilities in the private and public sector, and market conditions.

The central process determining the operational conditions of a mining operation involve a balancing of private rights and public goods that has to be continuous, legitimate, accountable and transparent. Each of the factors that come into play in relation to mining investment may offer opportunities, real or perceived, for discrimination. Determination of the reality of discrimination must reflect all of the factors that have to be taken into account, as well as the need for public authorities at all levels to be able to exercise reasonable discretion in protecting the public interest. While discriminatory intent may be real, as evidenced by a Chilean example, actual discrimination may prove even more difficult to prove.

### **3. Discrimination in Mining Investment: A Chilean Case<sup>15</sup>**

When two foreign companies purchased El Indio<sup>16</sup> and Disputada<sup>17</sup> in the late 1970s, pursuant to newly established policies opening the Chilean economy, they were confronted by a strong bias against foreign mining companies operating in the country. A

---

Konrad von Moltke, *Cross-media Pollution by Cadmium*. Paris: Organization for Economic Cooperation and Development, 1987

<sup>15</sup> Lagos, Gustavo and Patricio Velasco, "Environmental Policies and Practices in Chilean Mining," in: Warhurst, Alyson, ed., *Mining and the Environment. Case Studies from the Americas*. Ottawa: International Development Research Centre, 2000, pp. 131-132.

<sup>16</sup> A Gold mine, currently owned by Barrick Gold Ltd, El Indio is located at high altitude. It is one of the first mines worldwide to epithermal deposits. <http://194.209.197.198> (access 2/25/01). "The El Indio mine was originally scheduled for closure in mid 1998 but has remained in production by reducing costs substantially. The Mine will remain open as long as it generates positive cash flow against the spot price of gold." <http://www.barrick.com/operations/other> (access 2/25/01).

<sup>17</sup> A copper mine (Los Brancos) and processing center. The mine is located at an altitude of 3 500 m, an area of extreme annual snowfall. The ore is transported 56 kms in an underground conduit to a processing center that is but 70 km northeast of Santiago at an altitude of 500m. Torres, Danilo, "El Proyecto Expansión Los Brancos de Disputada," at <http://www.sonami.cl/boletin/bol1140>.

widely held view, equally prevalent in the bureaucracy and civil society, was that foreign mining companies had failed to leave an adequate portion of the available rents in Chile, transferring them to subsidiaries located further downstream in the copper processing chain. The result was an environment in which a range of discriminatory practices took hold.

While changing the legal framework the new investment policies of the military government had not impacted on these attitudes. The bias still existed and affected not only the formal regulations imposed on copper mining enterprises but also their enforcement. For example, environmental organizations and the public tended to systematically question environmental impact statements produced by foreign-owned companies while Chilean companies are typically not subjected to such scrutiny.

The pervasive bias also expressed itself in more stringent environmental requirements imposed on foreign owned mining operations—the associated smelters in particular. A special decree in 1985 compelled the Chagres smelter, owned by Disputada, to comply with air-quality regulations while the five remaining copper smelters in Chile, belonging two state-owned companies, CODELCO and ENAMI, did not have to comply.

An analysis of the practices of foreign-owned Disputada and El Indio indicates that they actually took stricter environmental measures than were required by Chilean legislation in the 1980s. These practices were initially not adopted by the state-owned corporations. Nevertheless these practices served to demonstrate how to approach these matters and ultimately influenced the development of new laws and regulations.

Disputada and El Indio openly discussed environmental issues with the public at a time when such a practice was taboo at CODELCO and INAMI. The state companies did not join the debate until the 1990s.

### ***3.1. Factors of Discrimination***

The discriminatory behaviour expressed itself in a number of different ways that were mutually reinforcing. The most open dimension of discrimination was actually the imposition of particular environmental requirements on the foreign invested firms that were not required of other firms in Chile. Presumably the expectation was that this would limit the profitability of the foreign investment. In practice that appears not to have happened, highlighting the complex relationships that exist between environmental requirements and the economic performance of an enterprise.

*3.1.1. Environmental Factors Requiring Regulation.* There are no known differences in regulatory environmental requirements regarding the four mines that were being compared, even though two lie in the arid northern section and two in the more temperate zone closer to the capital Santiago—although the Disputada mine lies at an altitude where winters are harsh. In truth, the differentiation between the mines occurred with respect to the smelting and processing operations rather than the actual mines themselves.

There are not many measures that can be taken to mitigate the environmental impacts of mines<sup>18</sup>. Dust control requires the regular application of water on exposed surfaces, and where water is scarce dust control is not practicable. Open cast mining produces large amounts of overburden and spoil which can be handled with greater or lesser environmental sensitivity but which must still be handled. And once the mining operation has ceased or moved on there are options for the rehabilitation of the landscape. None of these measures are very costly, but none of them promise much in the way of an economic return. Dust control can reduce worker health problems and prolong the useful life of equipment, but only if the general health status of workers is satisfactory and equipment is well maintained<sup>19</sup>. All of the mines are located at some distance from population centers and their environmental performance has largely been determined by the needs of the mining operations themselves.

---

<sup>18</sup> See below.

<sup>19</sup> Gordon L. Clark: "Global Competition and the Environmental Performance of Australian Mineral Companies: Is the "Race to the Bottom " Inevitable? *International Environmental Affairs* 5, No.3 (Summer1993): 147-172.

Frequently infrastructure associated with the mining operation—roads, railroads, settlements—will have significant environmental impacts. These do not appear to have been a matter for discussion in the Chilean case: the infrastructure for Disputada existed already; El Indio required limited infrastructure.

In Chile, environmental differentiation occurred with respect to the industrial phase of mining—smelting and processing. These have large potential impacts on air, water and soil and indirectly on wildlife and biodiversity so that local conditions need to be taken into account carefully in imposing requirements. Nevertheless there are only a limited number of processes that are currently in use, and the environmental consequences of each one of them are well known and quite predictable. Measures to mitigate these impacts are also well known and can have both positive and negative effects on the economics of the operation.

*3.1.2. Technology Factors.* The technology of extraction has evolved incrementally. As equipment has become larger and more powerful, fewer people have been able to extract more ore. The Disputada mine in particular utilizes a large diameter pipeline to transport ore 50km to the processing facility, located at an altitude almost 3000m lower than the mine. The underground pipeline does not appear to have notable environmental problems.

The situation is quite different with regard to smelting and processing. Several distinct technologies exist that exhibit specific environmental and economic advantages and drawbacks. For each of these there have been significant technological developments with environmental consequences, or vice versa: the need to meet environmental requirements has opened up new approaches to old problems. As a result environmentally sound newer processes are frequently no less efficient in terms of product recovered in relation to operating costs. Consequently the decision to move into new technologies can show both economic and environmental benefits, in particular for a start-up operation.

Both Disputada and El Indio involved significant additional investments, beyond the initial cost of acquisition. In the course of implementing these investments, both Disputada and El Indio utilized newer technology in comparison to existing Chilean operations and were able to achieve environmental improvements at a modest cost. This confirms the general hypothesis that facilities that are in a process of dynamic investment and development are also in a better position to address environmental issues than facilities that see no new investment so that management must find solutions within existing constraints. This may argue in favor of foreign direct investment, which involves a review of the entire investment and management structure of an operation, often with the expectation that significant improvements in the economics of the operation are possible. Yet these advantages will only be realized if the foreign investor is willing to make financial commitments that go beyond the initial investment, and is willing to invest in a strengthening of management.

*3.1.3. Public Perception and Social Values.* The foreign investors faced strong public bias when entering Chile in the 1980s. This bias was not related to environmental values but was expressed through the imposition of more stringent environmental standards and the more rigorous scrutiny of environmental reporting and performance. While it may be an exaggeration to state that the enterprises benefited from these standards and this scrutiny there is certainly no evidence to the contrary. Moreover the demonstration that improved environmental performance could be achieved without sacrificing economic performance brought about some change in public perception and social values as domestic competitors were increasingly forced to meet comparable standards.

There are clear differences between public attitudes in the northern region, whose economy is almost exclusively devoted to mining and support services for mining, and the central sections where urban populations and agriculture compete for land and the environment is burdened by the impacts of urbanization. This demonstrates the importance of prior demands on environmental services as a factor in determining the appropriate environmental requirements that need to be imposed. These will need to be more stringent in the central sections of the country than in the north.

*3.1.4. Institutional Factors.* At the time of the investments in El Indio and Disputada the environmental authorities of Chile were still in a rudimentary state. CONAMA, the Chilean environmental agency, was not established until after the end of the dictatorship. It took several years to develop the institutional capacity to manage the permitting, monitoring and review activities associated with a major mining operation. There is no direct evidence concerning the consequences of such an absence of institutional capacity. It certainly implied that the imposition of comparable environmental requirements on all mining and smelting operations in the country was well beyond the capacity of the environmental administration of the time. Thus the only options were to impose stringent requirements on the new investors, creating an element of discrimination, or to let the new investors operate under the same lack of supervision that had applied to the mining operations in the country until then.

*3.1.5. “Measures Equivalent to Expropriation.”* In this entire process there is no evidence that the more stringent environmental requirements actually had a negative impact on the foreign investment. They were fully integrated into the operations of the companies and consequently contributed both to the quality of management and to the overall efficiency of the operations. Indeed, as the state-owned companies were forced to apply similar practices the foreign-owned companies presumably reaped some competitive benefits from having them in place early.

This intuitively surprising outcome—although consistent with experience elsewhere—highlights the complex relationships between environmental performance and economic viability of an enterprise. It raises questions about applying concepts such as “performance requirements” or “takings” to specific environmental requirements without careful consideration of the circumstances surrounding an investment.

### **3.2. *Responding to Discrimination***

Discrimination with respect to an investment generally concerns individual projects and investors and occurs in a dynamic environment, in which public authorities respond to changing demands and perceptions, market conditions fluctuate, and investors can take measures to mitigate the economic impact of environmental requirements. An investment, certainly a productive investment such as a mine, as opposed to portfolio investment in the shares of a mining operation, occurs over a period of time, bringing into play both management factors and time factors.

*3.2.1. Management Factors.* The environmental impact of a mining operation depends critically on the quality of on-site management and the willingness of off-site management to support environmentally responsible behaviors. In some instances, the quality of management can be the most important factor in determining the actual environmental performance of a mine.

The new investors in Chile brought management skills that had been acquired in the process of adapting to progressively more stringent environmental requirements in other, primarily developed countries. There is no direct evidence to support the view that the ability to successfully manage environmental affairs in the mining operation improved the companies' management performance in general. Yet the literature suggests that this should have been the case. Certainly the willingness to engage in public debate about the environmental issues, in particular in connection with the Disputada complex located within 100km of the capital city and consequently impacting the regional environment, is an indication of management confidence in its ability to address environmental concerns and to articulate its position in public, even in adversarial conditions.

*3.2.2. Time Factors.* One foreign owned mine, El Indio, was a start-up and could consequently incorporate environmental measures from the outset. Disputada was created in 1916. From 1952 it was controlled by French interests who were bought out in 1972 by the national mining enterprise. Six years later it was taken over by Exxon Minerals

International<sup>20</sup>. This repeated change in ownership would normally imply unstable management and consequent environmental problems. Yet Disputada has continued to invest and expand, and to address environmental issues in a forward-looking manner. In this instance the foreign investor has greatly expanded the business, and has been able to incorporate environmental improvements in the process of expansion.

### **3.3. Conclusion**

What is most striking about the Chilean mining example is that clearly discriminatory intent did not have a visible deterrent effect on the mining operations that were actually launched. It is conceivable that other investors were deterred by the existence of de facto discrimination in the application of the law—but it is in the nature of such discrimination that little or nothing is ever known about it. Investors presumably used their capital elsewhere and have no strong interest in discussing the impacts of discrimination on their investment decision. This reflects the fact that investments are case by case decisions, on the part of the investors and on the part of the public authorities involved.

At the same time, some investments were actually made in the face of this de facto discrimination, but the information about discrimination is not very systematic. Again the circumstances of the investment process play a critical role: initial investors were presumably able to factor the costs of discrimination into their calculations—and decided that the projects were economically attractive under these circumstances. Once these costs have been accepted there is not much interest in protesting them: the project is presumed profitable and the investors need to remain concerned about their continuing relationship with the public authorities. After all, investors become owners, and owners have complex interests when it comes to their relationship to public authorities: they may need further licenses, the construction and maintenance of infrastructure, understanding treatment of their tax obligations, etc.

---

<sup>20</sup> Danilo Torres F., “El Proyecto Expansión Los Blancos de Disputada,” <http://www.sonami.cl/boletin/bol140/art6.html>

In the absence of internationally recognized criteria for good practice in mining it is virtually impossible to distinguish legitimate acts of government action from ones that are discriminatory. It becomes necessary to undertake a specific evaluation of each project, an undertaking that requires remarkable institutional capabilities in the adjudicatory structure that may be envisioned.

#### **4. Institutional Demands for the Attainment of Non-Discrimination**

One of the secrets of the success of trade regimes is that the institutional demands for the attainment of non-discrimination are quite modest<sup>21</sup>. Embedded within a theoretical structure governed by comparative advantage, trade regimes achieve non-discrimination by means of most-favored nation treatment, national treatment, requirements concerning the transparency of domestic measures, and dispute settlement. Investment regimes, however, deal with economic phenomena that are significantly more complex without benefit of the same powerful theoretical framework. As a consequence the institutional demands on international investment regimes are different, and more complex, than those for trade in goods.

Any discussion of discrimination and non-discrimination in international investment regimes must include all measures that treat foreign investors differently than domestic investors under “like circumstances.” Performance requirements certainly fall in this category, since by definition they concern requirements that are imposed on foreign investors only. As far as expropriation is concerned, no country may be expected to sign an agreement that contains disciplines on expropriation if comparable disciplines are not in place domestically. Experience with NAFTA Chapter 11 indicates, however, that transposing the issue of expropriation into the international arena effectively reopens debates about “takings” that have been considered relatively settled in most countries<sup>22</sup>. Moreover some international investment agreements do not include requirements that

---

<sup>21</sup> The term “institution” as used here refers to the “rules of the game.” It is not a synonym for “organization.”

domestic avenues of redress must be exhausted before international redress is sought, effectively replacing the domestic jurisdiction by an international one for foreign investors. In other words while they are certainly relevant to the broader problem of discriminatory actions they go much further in their reach by establishing an absolute standard that is applicable irrespective of discriminatory effect or the existence of domestic avenues of redress.

The conventional definition of “non-discrimination” draws on the institutions of the trade regime that establish a *relative* standard: “like” goods must be treated alike, and no worse than “like” domestic goods. The transition from “like goods” to “like investments” entails a dramatic change in scope. One sign of this change is that investment agreements increasingly replace the concept of “like” that of “like circumstances,” recognizing the wider range of factors that need to be taken into account in relation to investments.

Where extractive activities are concerned, this concept of “like circumstances” includes a significant number of highly specific environmental factors that can require a remarkable degree of individual consideration before any determination that “like circumstances” apply in practice. It is not sufficient that the output of a productive facility be “like” to establish that the facilities themselves are operating under “like circumstances.”

Examples abound: pond fisheries versus fish ranches, versus open sea fisheries; chicken or pig factories versus more “natural” forms of production; plantations versus trees harvested from natural forests; shade grown coffee versus tree coffee; ranched wildlife versus free wildlife; surface mines versus subsurface mines.

The additional institutions that are to be found in investment agreements establish *absolute* standards, prohibitions against certain performance requirements and against expropriation without due compensation, including indirect expropriation. In reality these provisions are as much a part of the structure to ensure non-discrimination in investment as are the standards that are traditionally identified with the principle of non-discrimination. They establish an absolute standard: governments party to these

---

<sup>22</sup> *Private Rights, Public Problems* (see fn. 2)

agreements promise to refrain from engaging in such practices, whether they apply to domestic investors or not. This adds yet another layer of complexity.

The greater complexity of addressing discrimination and non-discrimination with regard to investment implies a significant degree of procedural safeguards to ensure that private interests and public goods are properly balanced. Decisions must be reviewed by independent, publicly accountable bodies, courts or similar institutions, to ensure that outcomes are appropriate.

This discussion suggests that the attainment of non-discrimination with respect to investment requires a significantly more elaborate institutional structure than for example for trade in goods. It also signals that cases of discrimination in foreign direct investment will be both more numerous and less readily discovered. Discrimination may occur with regard to certain sectors, and such practices are typically covered by exceptions and reservations to treaties.<sup>23</sup> In practice discrimination against foreign investors in entire sectors in a manner that is not covered by the law is extremely rare. Discrimination with respect to foreign direct investment typically occurs with respect to individual investments. This feature makes an investor/state dispute process a necessity for any meaningful investment agreement.

Extractive investments are significantly distinctive even while their products are essentially alike. They almost always involve environmental values that are of public concern. Balancing individual investor rights and the public good requires the identification of numerous factors that influence both economic output and public goods, many of which are liable to occur in unique patterns and combinations.

Most OECD countries have developed extraordinarily elaborate institutional mechanisms to ensure that these factors are appropriately and legitimately brought to bear on individual decisions and regulatory measures of general application. They include rights

---

<sup>23</sup> During the negotiations for the Multilateral Agreement on Investment (MAI) such reservations and exceptions proliferated.

of standing, environmental assessment procedures, the use of expert advisory groups to interpret scientific evidence, notification and transparency requirements, rights of participation, judicial review (frequently at several levels). In most countries the full panoply of legislative, administrative and judicial institutions may be required to resolve matters of major significance. In some instances specific legislative acts may be needed.

Few developing countries have comparable institutional structures and where they exist . Even when the corresponding institutions exist they may lack resources and experience, and the necessary institutional cooperation may prove difficult or impossible to achieve.

The challenge facing international society is to determine what institutions will be needed at the international level. These must serve as instance of last recourse for foreign investors who may have been treated in a discriminatory manner by any or all of the domestic institutions. At the same time it must create a support structure to ensure that essential procedures and safeguards are in place in countries that have a less developed institutional system.

This discussion of mining and international investment regimes has identified a large number of factors that need to be considered in determining whether there has been discrimination in relation to a mining investment. In particular a balance needs to be struck in a manner that is legitimate, transparent, and accountable between investor rights and public goods that are affected by the investment. An international investment regime that is capable of determining whether the balance that has been struck is discriminatory or represents the legitimate exercise of regulatory authority will need to meet stringent standards that presumably can only be achieved through a substantial institutional endowment.

This discussion has not addressed issues associated with international public goods, such as climate change, biodiversity, or the emission of persistent organic pollutants into the environment. Taking them into consideration will add a further layer of complexity to a structure that promises to be highly complex anyhow.