

SUSTAINABLE DEVELOPMENT IN THE ATACAMA DESERT?
COMMUNITY AND THE COPPER MINING INDUSTRY IN NORTHERN CHILE

By
Livia C. Macias

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Croft Institute for International Studies
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University of Mississippi

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Approved:

Advisor: Dr. Oliver Dinius

Reader: Dr. Kathleen O'Neil

Reader: Dr. Holly Reynolds

ABSTRACT

LIVIA C. MACIAS: Sustainable Development in the Atacama Desert?
Community and the Copper Mining Industry in Northern Chile

Antofagasta is a particularly difficult region to promote sustainable development given its location in the Atacama Desert in Northern Chile. In the single-industry community case in Antofagasta, the relationship between the copper industry and the surrounding community is essential for the survival of both. The purpose of this thesis is to scrutinize the many definitions of sustainable development on the international, national, and local levels, understand the challenges of sustainable development in the Antofagasta Region, analyze the important aspects of sustainable development promoted by a single industry, and compare the initiatives for sustainable development between state and private industries in this particular region. This study focuses on Chile and the Antofagasta Region to explore the concept of sustainable development and explores the possibilities for achieving sustainable development in the industrially-driven communities of the Antofagasta Region.

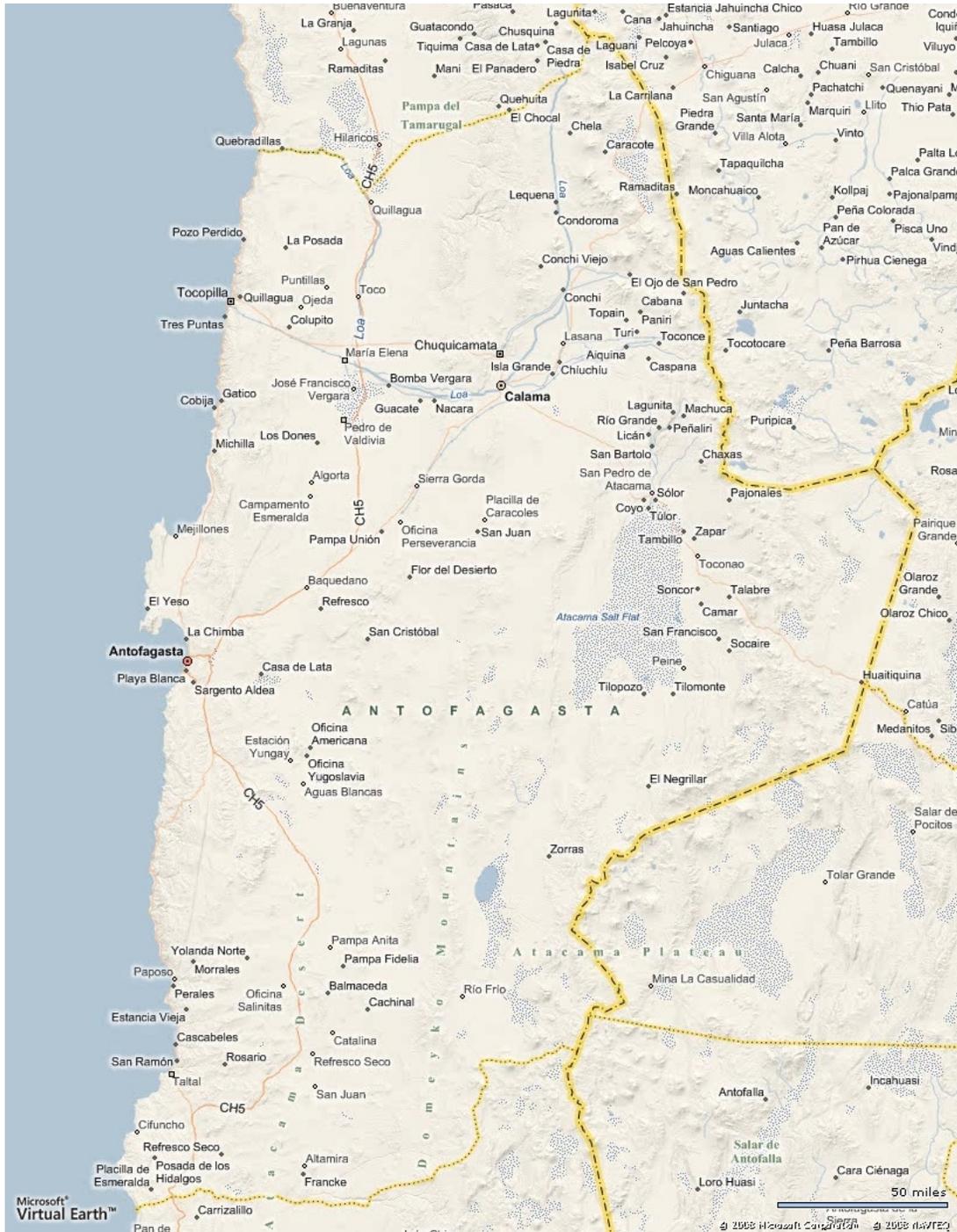
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Antofagasta Region Chile



Source: Microsoft Virtual Earth. Microsoft, 2008.

Introduction

In Spring 2007, I studied abroad with the School for International Training (SIT) in Chile to study economic development and globalization in the country. I first learned about sustainable development in Chilean communities in a small town outside of the capital city of Santiago called Maria Pinto. Recently, Maria Pinto received a grant from the municipality to engage in projects for sustainable development. Through government-issued funds, these projects included recycling and waste management facilities, water treatment plants, the building of new schools and community centers, educational programs in the schools to promote environmental sustainability, and micro credit programs for women to start their own small businesses. The president of Maria Pinto's development project, Cesar Aros, boasted the successes of the programs, considering that ten years ago, when Maria Pinto was in its worst condition, funds for sustainable development were not available. This connection between Chile's growing economy and community awareness of sustainable development sparked my interest.

Another academic excursion took me to northern Chile, in the Antofagasta Region (Region II), where I first visited an example of Chile's largest industry: the mining of copper. The dry Atacama Desert was a stark contrast to the greener regions of the south. On the bus ride to the Radomiro Tomic mine, a division of the state-owned Codelco copper company, I caught a glimpse of a row of billboards leading toward the mine. Most of the billboards had pictures of the Chilean flag waving in the background or smiling miners in hard hats that read "All for Chile" or "Contributing to the benefit of all

Chileans.” Growth in copper production has led to overall growth for Chile. Within the past decade, the copper industry has been responsible for over half of Chile’s exports and nearly 15% of its GDP. Codelco, being the largest state-owned copper producer, is not only a great influence to the Antofagasta Region, but an integral component of Chile’s economic development.

My class met with Samuel Orellana, an engineer of environmental management, at the Radomiro Tomic mine about half an hour from the city of Calama. Radomiro Tomic is Codelco’s newest division, in production for the last six years. Mr. Orellana explained that Radomiro Tomic was a special division because it was the only site in the region that had greenhouse facilities that produced trees for the reforestation project in Calama.

Trees? In the Atacama Desert?

This was part of Codelco’s latest long-term project for “sustainable development.” The project is called “Buen Vecino”, or “Good Neighbor.” Mr. Orellana, a resident of Calama, is one of the engineers that work with projects for sustainable development in the city and in other parts of the Antofagasta Region. Buen Vecino is what Calama had been waiting for a long time, he explained during his talk. As I heard him discuss Calama’s community development problems and Buen Vecino’s solutions for sustainable development, I wondered if the company’s programs for sustainable development would benefit the city at all. Was it worth spending thousands of dollars on reforestation in a place that had little vegetation? Why is it important for Codelco to promote “sustainable development” in Calama and the Antofagasta Region in the first place? In Maria Pinto, the city itself was promoting such projects for sustainable

development, but I wanted to understand better why the industry was more influential in Calama's case for achieving sustainable development.

The projects for sustainable development in Codelco's Buen Vecino were not unlike the projects I learned about in Maria Pinto; but the fact that Buen Vecino was promoted by an industry changed the perspective of the matter. I observed that sustainable development had different meanings in different cities, and I was beginning to understand that the term could have different meanings between an industry and the city it influences economically and socially. I assumed earlier that sustainable development meant keeping a community alive, but if the community is dependent on an industry, which is also concerned with its survival, the importance of sustainable development for both groups could be even more pertinent and perhaps maintain different perspectives of its idea.

First I needed to know what "sustainable development" is and why it was important to these communities. Sustainable development became an increasingly popular paradigm, both in academic and policy realms, in the last two decades of the twentieth century. It was realized that sustainability refers to more than purely ecological/environmental sustainable development; economic and social sustainability are considered equally important. To be sustainable, development must be viable in the long run in a number of closely interlinked ways. In a rapidly globalizing world, industries, both foreign and state, bring new challenges to communities that strive to attain sustainable development. As the meaning and importance of sustainable development grows, it is important to understand why sustainable development is

essential for any community, especially smaller communities that are based on a single industry.

The purpose of this thesis is to scrutinize the many definitions of sustainable development on the international, national, and local levels, understand the challenges of sustainable development in the Antofagasta Region, analyze the important aspects of sustainable development promoted by a single industry, and compare the initiatives for sustainable development between state and private industries in this particular region. This study focuses on Chile and the Antofagasta Region to explore the concept of sustainable development. Antofagasta is a particularly difficult region to promote sustainable development given its location in the Atacama Desert. This region is also the heart of the Chilean mining industry, representing 53% of Chile's mining output.¹ Known as the world's "copper capital", most of the main international copper companies have offices and mines here, as do the leading suppliers of services for the industry. Sustainable development is becoming a more important topic for both industries and surrounding communities alike as the role of economic development in this region evolves into a more social issue for Antofagastans.

The first chapter presents various meanings of sustainable development as they apply in a general context. The broader definition of "development" accepted by international standards is analyzed, as the chapter describes how the perceptions of development have changed from economic growth to social welfare. The modernization theory and the classical approach to development will be applied to the Chilean experience, as it explains the economic and social factors and patterns for development

¹ "The Antofagasta Region." Chilean Government. 2 Oct 2007. 29 Mar 2008. <www.chileangovernment.gov.cl>.

and prospects for sustainability. This chapter will also strive to understand why sustainable development is important at the community level, what makes a single-industry town what it is, and how corporate social responsibility plays a part in an industry's motive to promote sustainable development in such towns. This provides an analytical perspective to the case of sustainable development in the Antofagasta Region and the single-industry town of Calama.

Chapter Two demonstrates the importance of copper to both the Antofagasta Region and Chile as a whole. Antofagasta's historical experience with the copper industry illustrates the challenges for sustainable development the region had experienced and currently faces. As the history of this region reveals that sources for growth come and go, this chapter also presents the region's economic alternatives to copper mining.

In Chapter Three, I analyze how a private industry's initiatives for sustainable development are similar or different to those of a state company. A returning trip to the Antofagasta Region and the city of Calama allowed me to speak to representatives from Codelco to understand more about Codelco's Buen Vecino project and the company's plan to promote sustainable development in the nearby city. Interviews of the residents of Calama project the local reactions of Buen Vecino and its successes, if any, in their community. Residents of Calama were interviewed both individually and in a collective group. The chapter further explains the projects of Buen Vecino and how they may or may not coincide with the analyzed concept of sustainable development in the Antofagasta Region.

The final chapter analyzes the relationship between industry and the local community. This chapter argues that sustainable development must be understood from

different perspectives if its goals are to be achieved, for the term is one that is easily manipulated to suit the interests of one group. As I noted in my observations about Maria Pinto, sustainable development is a goal that all communities intend to achieve. Although interpreted differently, it is a notion accepted by industry and community alike. In the single-industry community case in Antofagasta, the relationship between the copper industry and the surrounding community is key for the survival of both. This thesis explores the possibilities for achieving sustainable development in the industrially-driven communities of the Antofagasta Region.

Chapter One: Questioning “Sustainable Development”

It has been suggested that there are over seventy definitions of “sustainable development” that are currently in use.² Certainly the most widely known is that provided by the World Commission on Environment and Development (today known as the Brundtland Commission), which first used the term in 1987. It is suggested that sustainable development is “development which meets the needs of the present without compromising the ability of future generations to meet their own needs.”³ This definition proposes the goal of “sustainable development” – that it is development that must be durable in the long-term. At the same time, this definition says very little about what sustainable development actually is or how it might be achieved.

To assess the actual potential for sustainable development, a clear definition is needed. Therefore, this chapter scrutinizes the historically shifting meaning of “sustainable development.” This requires an understanding of the historical meaning of “development” before it acquired the qualifier “sustainable,” a discussion that covers one of development’s most common meanings, namely economic growth. The addition of the qualifier “sustainable” marked a shift away from that easy equation of “development” and “economic growth.” The definition offered by the Brundtland Commission opened up a much broader spectrum of meanings: explicitly or implicitly, it has been interpreted and reinterpreted in different and often discordant ways. This chapter tries to throw light

² Elliott, Jennifer. *An Introduction to Sustainable Development*. New York: Routledge, 1999, 6.

³ World Commission on Environment and Development. *From One Earth to One World: An Overview*. Oxford: Oxford University Press, 1987.

on these attempts to define the concept with greater precision. The last concept discussed in this chapter is “community development,” which brings the issues of sustainable development to the local level and provides the analytical angle for an application to the mining towns in Antofagasta.

Early Perceptions of Development: Development as Growth

Ideas about the best means by which to achieve human aspirations and needs are as old as human civilization. The systematic study of development, however, has a relatively short history, dating back only to the 1950s. If development means achieving human needs and aspirations, then development would be something which all societies aspire.⁴ The interdisciplinary field of development studies has seen many changes in thinking regarding the meaning and purpose of development, ideologies, and in development practice in the field, strategies of development.

During the first United Nations Development Decade of the 1960s, development thinking (encompassing the aspects of ideology and strategy) prioritized economic growth and the application of modern scientific and technical knowledge as the route to prosperity in the underdeveloped world at that time.⁵ It was a period characterized by optimism and global cooperation, and it was assumed that many development problems of the underdeveloped world would be solved quickly through the transfer of finance, technology, and experience from developed countries.⁶ At the time, the acceptable

⁴ Robert Potter et al. Geographies of Development, Second Edition. Englewood Cliffs: Prentice Hall, 2003, 81.

⁵ The UN Development Decades are specific goals set by the General Assembly for developing countries to reach a specific annual economic growth rate and other development indicators by the end of each decade. The first UN Development Decade was launched by the General Assembly in December 1961. It called on all member states to intensify their efforts to mobilize support for measures required to accelerate progress toward self-sustaining economic growth and social advancement in the developing countries.

⁶ Elliot, 10.

model of economic stimulation was the European model of development.⁷ On the basis largely of the experience of the more developed societies, it was suggested that, through assistance in reaching a critical stage in levels of savings and investment, the benefits of development and characteristics of modernization would inevitably and spontaneously flow from the core to less-developed regions. Because of the way development was modeled as becoming ‘more like the West’ through processes of spatial diffusion, such thinking has been referred to as the modernization theory. The tendency to think about economic development mainly as economic growth was strengthened by the fact that in the postwar decade economic growth became a major objective of economic policy in the developed countries. It was also at this time that the literature on the economic development of less developed countries, insofar as it concerned itself with international trade and commercial policy, was dominated by critics of free trade.⁸

Modernization often referred to the modeling of economic and industrial successes, especially those of industrious, developed countries. The modernization theory applies mostly to developing countries that give up “traditional” methods of development for more modern ones, and may be defined as the belief that development is about transforming ‘traditional’ countries into modern, “westernized” nations. Neoliberal interpretations of development typically suggest that the concept involves maximizing the net benefits of economic growth, subject to maintaining the services and quality of resources over time.

Walter Rostow’s classic *The Stages of Economic Growth* can be viewed as a pre-eminent theory of modernization to appear in the 1960s. He argues that within a society

⁷ McMichael, Philip. *Development and Social Change, A Global Perspective*, Second ed. Thousand Oaks: Pine Forge Press, 2000, 7.

⁸ Arndt, H.W. *Economic Development*. Chicago: University of Chicago Press, 1987, 73.

sequential economic steps of modernization can be identified. Rostow envisaged that there are five stages through which all countries have to pass in the economic development process: the traditional society, preconditions to the take-off phase, take-off, the drive to maturity, and the age of mass consumption.⁹ Economic development, according to Rostow, is a country's "take off into self-sustained growth."¹⁰ His model encapsulates faith in the capitalist system, as expressed in the subtitle of his work: a non-communist manifesto for economic growth.¹¹ The capitalist system is viewed in the modernization theory as a distinctive way of organizing economic relationships within a society and a powerful mechanism for producing wealth.

The study of development derives also from classical and neo-classical economics has generally dominated policy thinking at the global scale. Classical economic theory, based on the writings of Adam Smith and David Ricardo, equates economic development with the growth of world trade and the law of comparative advantage. Total production was to be maximized if countries specialize in the production of commodities for which they are particularly suited. Neo-classical theories, since 1945, take a similar view, stressing the importance of liberating world trade as the essential path to growth and development. The goal of economic development is basically growth in income – and maintaining that growth for the benefit of the country's economy.

Development still meant economic development in most cases. An example in the Latin American context includes the Washington Consensus, which is the development framework of liberalizing and privatizing advocated by the International Monetary Fund, World Bank, and World Trade Organization. It is broadly associated

⁹ Potter et al, 89.

¹⁰ Ibid.

¹¹ Walter Rostow. Quoted in Economic Development by H.W. Ardnt, 59.

with expanding the role of market forces and constraining the role of the state. It is argued that the policies associated with the Washington Consensus are a way to open up less developed countries to investments from large multinational corporations and their wealthy owners in advanced economies. The principles of capitalism paved a path for industries to spread across the globe. Generally, developing countries with skilled and disciplined work forces, well-developed infrastructures, and natural resources can afford to drive hard bargains with foreign firms that will be eager to gain access to the country and its many economic opportunities. As an essential factor of economic development, multinational corporations serve as transmitters of modern skills and values while also providing close-up examples of modern forms of economic organization. Those that bring large industries to developing countries bring economic opportunities to the surrounding population.

Changing Perceptions of Development: Questioning Sustainability

Since the 1970s, it was recognized that patterns of economic growth had led to other social disparities. Inequality between and within countries had worsened. The optimism of a speedy end to underdevelopment faded. Development thinking was increasingly influenced by the writings of scholars within the developing world itself.¹² Phrases such as ‘growth and equity’ or ‘redistribution and growth’ emerged at this time and encapsulated the recognition that economic growth remained a fundamental ingredient within development thinking and action, but that the nature of that growth was critical to ensuring that the benefits do not fall solely to a minority of the population.¹³ By the third UN Development Decade of the 1980s, distributional issues, such as

¹² Ibid.

¹³ Elliot, 12.

improving the income levels of target populations, were accepted as fundamental parts of any development strategy. The 1980s, in contrast to the 1970s, was seen as a multidimensional concept encapsulating widespread improvements in the social as well as the material well-being of all in society.¹⁴ In addition, it was recognized that there was no single model for achieving development and that investment in all sectors was required. Above all, 'development' needed to be sustainable; it must encompass not only economic and social activities, but also those related to population, the use of natural resources and the resulting impacts of the environment.¹⁵

Table 1 contrasts some 'good' and 'bad' outcomes that are frequently associated with the processes of development. On the plus side is the idea that development brings economic growth and national progress, and should involve other positive outcomes such as the provision of basic daily needs (food, housing, basic education, and health care), better forms of governance and a move towards patterns of growth that are more sustainable in the long term. Negative connotations are also associated with the processes of development, as society pays the cost of economic growth, such as the creation of spatial inequalities and the perpetuation of poor working conditions. This represents that development involves both economic and social changes. All in all, development is generally understood to be positive because it brings material and psychological improvement as humans learn to manipulate the natural world.

¹⁴ Ibid.

¹⁵ Ibid.

Table 1

Alternative interpretations of development	
<i>Good</i>	<i>Bad</i>
Economic growth	Dependent and subordinate process
Overall national progress	Creates and widens spatial inequalities
Modernization	Underlines local cultures and values
Improves the provision of basic needs	Perpetuates poverty and poor working conditions
Can help create sustainable growth	Often environmentally unsustainable
Improved governance	Infringes human rights and undermines democracy

Source: Potter, *Geographies of Development*, 4.

Although the interpretations of development suggest a generally positive connotation, the negative consequences of development are considered social challenges that development, namely economic development, produces.¹⁶ As Table 1 demonstrates, development by itself is not a harmonious process. In order to satisfy those “needs” that development is meant to fulfill, the concept of “development” evolves into a notion that encompasses all “needs” for every spectrum of society.

Toward the end of the century, it was more apparent that development required more than economic solutions. In the 1990s, after more than three decades of ‘development’, many developing countries had debt burdens which outweighed their gross national product several times over.¹⁷ Beyond such indicators of economic change into the late 1990s, the decade presented insights into the achievements and continued deprivation in the developing world in terms of wider aspects of human development. The United Nations Millennium Development Declaration, established in 2000, states that nations have “separate responsibilities to individual societies” and a “collective

¹⁶ Philip, McMichael. *Development and Social Change: A Global Perspective*, Second ed. Thousand Oaks: Pine Forge Press, 2000, 187.

¹⁷ Ibid.

responsibility to uphold the principles of human dignity, equality and equity.”¹⁸ It is by this time a human face was attached to economic development. A responsibility to society became a new theme related to economic policies.

Sustainable Development

The latter part of the century is when the term “development” evolved into more than an economic concept. Development is now not only a means of meeting needs for the present, but meeting needs in the long-term. Today sustainable development attempts to include the meanings of development, serving as a concept, a policy prescription, and a moral interpretive.

Because sustainable development involves more than development in one area or for one purpose, the concept is considered an ambiguous one. It has been suggested that “sustainable development is a flag of convenience under which many ships sail, and it is this catholic scope that goes a long way to explain its power and popularity.”¹⁹ In practice, the inherent ambiguity of the idea is often exacerbated by the fact that a range of terms such as “sustainable development”, “sustainability”, “environmental sustainability”, “sustainable growth”, etc., are used more or less interchangeably when in fact they have specific and significantly different connotations. “Sustainable development” is also interpreted by some as a moral concept which implies both the maximization of well-being and the progressive achievement of equality in society.²⁰ As English Nature (today known as Natural England), the U.K. government agency for wildlife conservation, points out:

¹⁸ United Nations Millennium Development Declaration. United Nations. Resolution Adopted by the General Assembly 52/2. 18 September 2000.

¹⁹ Ian Drummond. The Condition of Sustainability. New York: Routledge, 1999, 7.

²⁰ Ibid, 9.

It is important to distinguish between ‘sustainable development’ and ‘sustainability’. Sustainable development is a broader social objective: it is concerned not just with environmental protection but with the achievement of other social objectives....This is not the case, however, for ‘sustainability’. This is concerned only with the environment, and it can be defined quite precisely. (It is true that sometimes the adjective ‘sustainable’ refers to social and political sustainability as well as to environmental – some authors have argued that the stability and durability of social institutions as much as the environment are necessary to a ‘sustainable society’. But ‘sustainability’ has come to be almost exclusively an environmental term.) Thus ‘sustainability’, in a narrow sense, is related to the resilience of ecosystems that is their ability to withstand various types of stress, rather than any social or economic considerations.²¹

Although there is no single uncontested definition of what sustainable development is, nor any consensus about how it might be best achieved, a range of themes and issues, including needs, equity, intergenerational equity and resources, are common to most interpretations. A truly sustainable system would be one in which all processes were internalized by virtue of the system. Only then is sustainable development a self-enforcing process capable of achieving its own equilibrium.

Sustainable development at the community level

Though development is generally described by international organizations as being comparable between economically advanced nations and low-income nations, the term can actually be applied to many levels of societal organization.²² The term is often discussed at the macro-level, but it is a concept that relates to all parts of the world at every level, from individual to global transformations. Thus, development relates just as much to cities and small regions, such as Antofagasta, as it does to developing countries.

²¹ English Nature. *Strategic Planning and Sustainable Development*. Peterborough: English Nature, 1992. Quoted in The Condition of Sustainability, Drummond, 8.

²² McMichael, 44.

When considering sustainable development in the Antofagasta Region, one must consider its rapidly growing population. Urbanization, the increase in the proportion of a given population that is to be found living in urban spaces, goes hand in hand as consequence of the process of development, however the latter is defined.²³ Urbanization can be defined as the process which leads a higher proportion of the total population of an area to live in towns and cities. It is thus a relative measure, recording the percentage of the total population of a region that is to be found in towns and cities. Data show that where jobs do exist, rates of pay are higher in urban areas, and also that average incomes increase with city size in a progressive manner.²⁴ Through time, it is assumed that the processes of urbanization, structural change, development, and industrialization are all fundamentally correlated. The continued rapid urbanization of the world's population and the globalization of economic activities are changing the relationship of industry and society. Contemporary urban planning and industrial practices have experienced a profound shift as neoliberalism has become the dominant development paradigm.

The term "community" also has many definitions. It is generally defined as an association of an interacting population. The meaning of "sustainable development" at the community level tends to share the common elements of a process of bringing people together to achieve a common goal, usually related to changing the quality of life.²⁵ "Community development" generally refers to such processes. The following quotes offer possible definitions of community development:

²³ Potter et al, 367.

²⁴ Ibid.

²⁵ Paul Mattessich and Barbara Monsey. Community Building: What Makes It Work: Amherst H Wilder Foundation, 1997, 57.

“Community development is a situation in which some groups, usually locality-based such as a neighborhood or local community...attempt to improve their social and economic situation through their own efforts...using professional assistance and perhaps also financial assistance from the outside...and involving all sectors of the community or group to a maximum.”²⁶

“Community development is a series of community improvements which take place over time as a result of the common efforts of various groups of people. Each successive improvement is a discrete unit of community development. It meets a human want or need.”²⁷

Communities often receive outside financial assistance for development purposes. Community development is inherently related to sustainable development for they are goals that intend to meet the needs of community dwellers; therefore, community development has to be sustainable by definition. As for the goal of “meeting human wants or needs”, community necessities depend on the type of community it is – defined by its history institutions and economy.

Communities that revolve around single-industries are common in industrializing societies. In the case of single-industry communities, the relationship between the industry and community is very strong. When is a town considered a one-industry town? Clearly, a community, whether single-industry or not, requires the service of shop keepers, doctors, and other personnel, so the rule of thumb for determining whether a town is considered a “single-industry” community is that at least 75 per cent of the population has to work for the single industry and its supporting institutional services.²⁸ The communities based on this description are mainly built around resource-based industries and transportation, such as mining towns.

²⁶ Ibid, 59.

²⁷ Ibid.

²⁸ Rex Lucas. Minetown, Milltown, Railtown. Toronto: University of Toronto Press, 1971, 16.

Corporate Social Responsibility

The geographical position of a company town often forces sponsoring companies to provide a fully serviced community in addition to an industrial plant. Many communities of single-industries are located in inaccessible areas with no houses or institutional services.²⁹ Some corporations have the choice of building a new community or adding housing to an existing one.³⁰ One company in Canada, for instance, added a town to an existing town and was responsible for most of the expenditure connected with this plan:

“We built 45 houses on the town site in the existing town. Schools, churches, police and fire services were all established there already and we felt it was better economics to move into an established community where improvement could be made rather than to try to set up completely new services on raw site. So the schools were increased and water and sewage system was put in; this was the town’s idea. It amounted to a large capital assistance grant from us to help them with this new development.”³¹

Company towns often work with local governments to expand their community for both the town and company’s benefit. Representatives from the company usually have influential roles in local administration to incorporate company plans. Companies also engage in philanthropic projects to assist or provide resources for community development.

Such philanthropic projects in which some companies are involved refer to their own way of promoting development in the nearby community. Because of the important role the company has in the community, various groups, from the international community to local community, insist that companies take a responsible role as an

²⁹ Ibid, 23.

³⁰ Rex, 22.

³¹ Quoted in Minetown, Milltown, Railtown, 22.

influential actor in the social sector. Over the past ten years, corporate social responsibility has blossomed as an idea, if not as a coherent practical program. Corporate social responsibility commands the attention of industries everywhere, if their public statements are to be believed, and especially to of the managers of multinational companies.³²

Many companies refer to their corporate social responsibility, or CSR, to uphold the quality of life in the community they influence. Some have a code or pledge in order to gain trust within society. As a report from The Conference Board reveals, “Community activists are often skeptical or suspicious of corporate motives....so trust is crucial to success.”³³ The advocating of corporate social responsibility is a method for companies to build social and personal relationships with its workers, family, and community.

Table 2. Three Forms of Corporate Community Involvement			
	Business Investment	Social Investment	Philanthropy
Benefits...	Company	company and community	Community
Housed in...	Company	company and/or its corporate foundation	corporate foundation
Partners	supply chain; customers; investors; financiers	nonprofits; governments; other local businesses	nonprofits; other donors; employees; customers
Financial status	for profit	Subsidized	Nonprofits

Source: “Corporate Community Development: Meeting the Measurement of Challenge.” The Conference Board, 2002, 2.

³² “Corporate Community Development: Meeting the Measurement of Challenge.” The Conference Board, 2002.

The Conference Board is a non-profit organization that studies the linkages of public and private sectors. The Conference Board’s Working Group on Corporate Community Economic Development conducted a number of case studies to examine how some particularly successful corporate community development projects were undertaken.

³³ Ibid.

Table 2, from the *Corporate Community Development Report*, reveals some of the ways corporations engage in community involvement. In contrast to social investment, a philanthropic activity might be considered part of the corporation's citizenship activities, but not considered a strategic aspect of the company's commercial activities. Host communities are often fervent in the belief that the company is obliged to contribute to local charities and development. However, the businesses case for social investment, such as obtaining favorable treatment on taxes, can be quite strong as well. Reducing emissions of greenhouse gases, increasing spending on recycling, providing child-care facilities for its workers, or raising the wages of its lowest-paid workers are all examples of how companies try to benefit society, including the people that work for them.

There is no standard way for a company to exert corporate social responsibility, but international organization can set certain expectations from an industry to meet sustainable development goals. In a paper written for the United Nations Research Institute, Manuel Riesco states that there are six expectations that an industry should meet if it going to contribute to development in the corporate social responsibility context: (a) contribute to government revenues; (b) generate profits that are used productively in the country; (c) generate export revenues; (d) generate employment; and (e) promote community development.³⁴ He also includes that industries should also be mindful of environmental protection.³⁵ These expectations include both economic and social goals. Corporate social responsibility is a phrased coined by businesses themselves to let the public know that they are aware of its community. Ultimately, the nature of the business itself will generate social benefit as the industry produces a profit.

³⁴ Manuel Riesco. *Corporate Social Responsibility and the Mining Industry in Chile*. Paper prepared for the United Nations Research Institute for Social Development, 216.

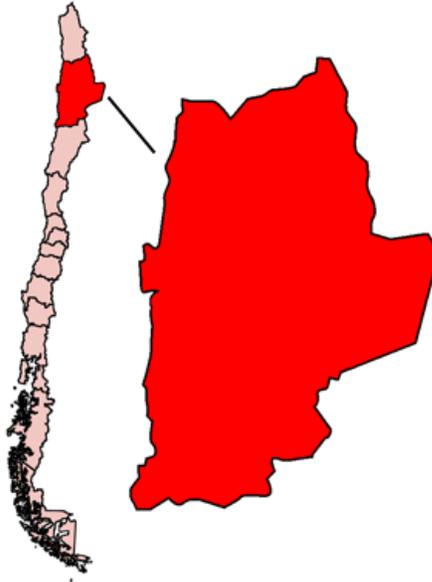
³⁵ Ibid.

Corporate social responsibility is the business' response to promoting sustainable development. Although the industry itself is a contributor to development, the emergence of CSR is another example of how the concept of sustainable development has evolved from a purely economic standpoint to a more social idea. Sustainable development is a notion that encompasses all facets of society and represents the needs of a community and their goals to achieve a state of well-being. It is becoming a more significant theme for industries that intend to have an influential social role in communities. In order to understand community development in single-industry communities, the objectives of sustainable development must be understood from all levels – economic to social development.

Chapter Two: Encountering Wealth in the Desert - The Antofagasta Region

In the case of Chile, recent economic development has been relatively successful on a nation-wide scale. Most regions of the country have resources that sustain export, such as minerals, agriculture, and other industries like fishing and lumber. Most notably, the Antofagasta Region, or Region II, has experienced economic growth in various industrial sectors. However, its history reveals that many of these sources for growth in the region, and even for the country, had its ups and downs. Today, the copper industry has proven to be Chile's most valuable industry, making up over half of the nation's exports. The presence and strength of the copper industry has changed the region of Antofagasta and its surrounding communities. In this chapter, Chile's experience with economic growth as a form of development is illustrated. A detailed description of the Atacama Desert and its historical and current experiences with the copper industry highlights the challenges of development in the region. This chapter explains the importance of the copper industry to Chile, not only as contributor to the overall growth of Chile, but also to the Antofagasta Region. This chapter will also present other alternatives for economic growth in Antofagasta.

Region II: Antofagasta, Chile



The Atacama Desert and Antofagasta

Stretching 600 miles from Peru's southern border into northern Chile, the Atacama Desert rises from a thin coastal shelf to the pampas, virtually lifeless plains that dips down to river gorges layered with mineral sediments from the Andes. In the center of the desert, a place climatologists call absolute desert, the Atacama is known as the driest place on earth. There are sterile stretches where rain has never been recorded.

Today more than a million people live in the Antofagasta Region.³⁶ They crowd into coastal cities, mining compounds, fishing villages, and oasis towns. Determined farmers in places where there is some water grow olives, tomatoes, and cucumbers with drip-irrigation systems, culling scarce water from aquifers.³⁷ In the far south, in the Chilean capital of Santiago, urbanites still consider the desert a wasteland, impervious to

³⁶ Prilit J. Vesilind. "The Driest Place on Earth." *National Geographic*. Vol.214 Issue 2. Aug. 2003: 46.

³⁷ Ibid.

environmental damage. Rumors persist that in the mid-1980s the government proposed creating a dumpsite for the world's nuclear wastes in the Atacama, but backtracked to avoid a public relations disaster.³⁸ According to a biology teacher in Iquique, one of northern cities, "There is a prejudice and lack of knowledge about the desert. People see the Atacama as a blank spot on the map."³⁹

This "blank spot on the map," roughly covering the Chilean regions of El Norte Chico and El Norte Grande (or, Little North and Big North), has been the engine of much of the nation's wealth for the past century, luring legions of workers to the area during a series of economic booms. Newcomers began to arrive in the late 1800s, when nitrates were first exploited in the Atacama Desert. By the 1930s, artificial nitrates had been developed, and the Chilean nitrate industry collapsed.

Most recently, the Atacama has become a popular destination for European ecotourists and Santiago's adventuresome elite, triggering yet another economic boom. In the Atacama's three largest coastal cities – Arica, Iquique, and Antofagasta, there are fancy shopping centers with bowling alleys and movie theatres. A beach scene materializes every summer in Arica, when vacationers arrive from landlocked Bolivia,⁴⁰ many intent on playing at one of the three golf courses in the Atacama. Entrepreneurs have laid out fairways and greens in the sand. There is no grass, and swaths of blue paint on the rocks demark "water hazards."⁴¹ Though the landscape appears inhospitable, there is a desire to change the landscape to fit the needs of a tourist economy.

³⁸ Ibid.

³⁹ Quoted in an article by Prilit Vesilind for *National Geographic*. Vol.214 Issue 2. Aug. 2003: 46.

⁴⁰ Vesilind, 46.

⁴¹ Ibid.

Resources are needed in order to keep these cities alive and connected to other parts of the world. Competing natural gas companies are bringing power to the Atacama's copper mines and sprouting cities. Pipelines draw fresh water from the Andes to the coast and other towns in between. A new highway, the Paso de Jama, now spans the mountains to connect Bolivia, Paraguay, Argentina, and Uruguay to the desert ports, which ship copper and other minerals to a growing Asian market. Though deemed as inhabitable to some, this region has many significant ties to the world economy and Chile's economic growth.

The "Chilean Miracle"

The Antofagasta Region is a large contributor to the history of Chile's economic growth. Chile is commonly portrayed as the great exception to Latin America's long and difficult struggle to overcome economic "backwardness" and instability. In 1982, conservative economist Milton Friedman of the University of Chicago pronounced the market-driven policies of Gen. Augusto Pinochet's military dictatorship "an economic miracle." In the 1980s and 1990s Chile had the best economic growth rate in Latin America after having one of the worst in the 1960s and 1970s. Between 1990 and 1995 the gross domestic product more than doubled from \$30 billion to \$65 billion. Chile's foreign debt equaled its annual GDP in the 1980s, but in the 1990s GDP grew much faster than debt, reducing the ratio of debt to GDP to one-half.⁴²

Much of this growth comes from the emphasis on exports by neoliberal economic principles. Neoliberalism, a term first employed in Latin America, describes the experiment in unregulated capitalism that the Pinochet dictatorship embraced in the years

⁴² The World Bank. Chile Executive Summary: The Challenge of Mineral Wealth: Using Resource Endowments to Foster Sustainable Development. October 2006.

following the 1973 coup that toppled the elected government of Socialist President Salvador Allende. Pinochet's government privatized almost every nationalized industry, from mines to factories. It welcomed foreign investment and eliminated protectionist trade barriers, forcing Chilean businesses to compete with imports on an equal footing or else go out of business. Chile's experience with neoliberal economic policies plays an important role in the appearances of multinational corporations in the region. The regime allowed foreign companies to invest in the copper mines of the Antofagasta region. The main copper company, Codelco, remained in government hands due to the nationalization of copper established by Allende. Foreign private companies continued to explore and develop new mines.

Chile's economy is mainly dependent on its exports sector. Exports in Chile have grown tremendously over the past several decades. Whereas in the 1960s and early 1970s, Chile's exports represented 12 percent of GDP, in 1996 they represented 20 percent.⁴³ As late as the 1970s, copper represented 80 percent of Chilean exports. By the late 1990s, mining exports had dropped to less than 45 percent of the total while other goods including fish meal, fruit, pulp and paper, and chemicals had risen to more than 55 percent of the total. Graph A shows that between 1960-2001, the Antofagasta Region, Region II, has contributed the most in the nation's overall GDP, due to copper and other mineral exports.

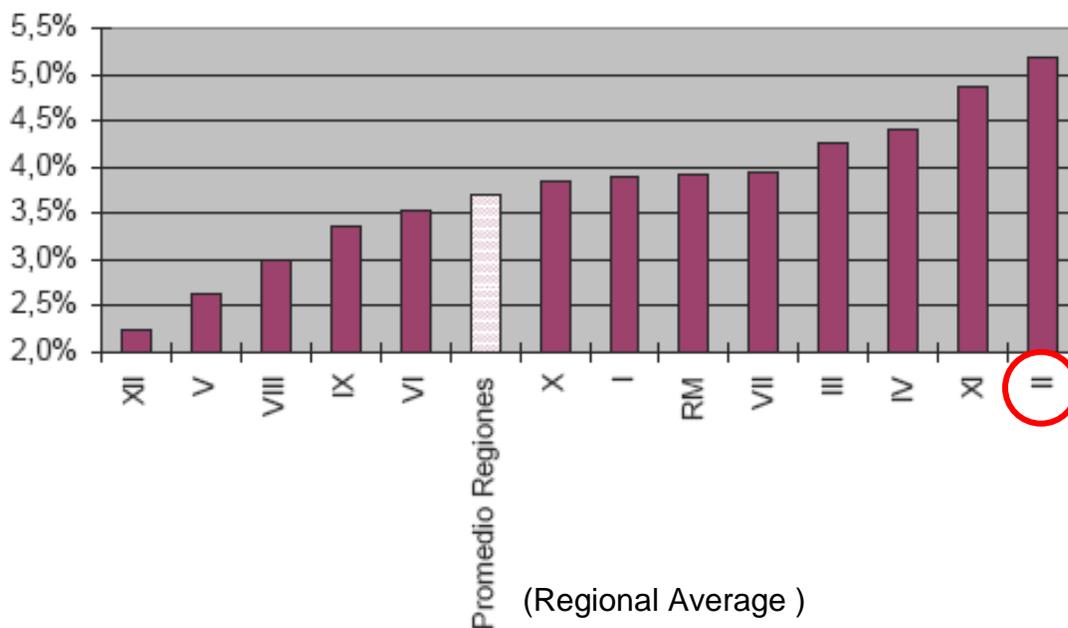
The volatility of the export-oriented economy and the detrimental effects that could have on the Chilean economy is represented in its ties to other major economies. Chile's largest trading partners are the United States, Japan, Argentina and Brazil.⁴⁴ Chile

⁴³ Rector, 17.

⁴⁴ CIA World Factbook. Chile. www.cia.gov. 13 December 2007.

also has a special trade agreement with China, which has been investing in steelmaking, mining, and oil ventures in Latin America.⁴⁵ The minerals that northern Chile has to offer compliment China's appetite for mineral ores for its growing economy. The negative side to this emphasis on the trade economy is that the weak Asian and Latin American economies dampened Chile's growth in 1998 and 1999 while the recessions in the United States and the European Union had a similar effect from 2001 to 2003.⁴⁶ The economy of Chile is very dependent on the economies of other countries.

Graph A. Contribution to Growth of GDP (1960 – 2001)⁴⁷



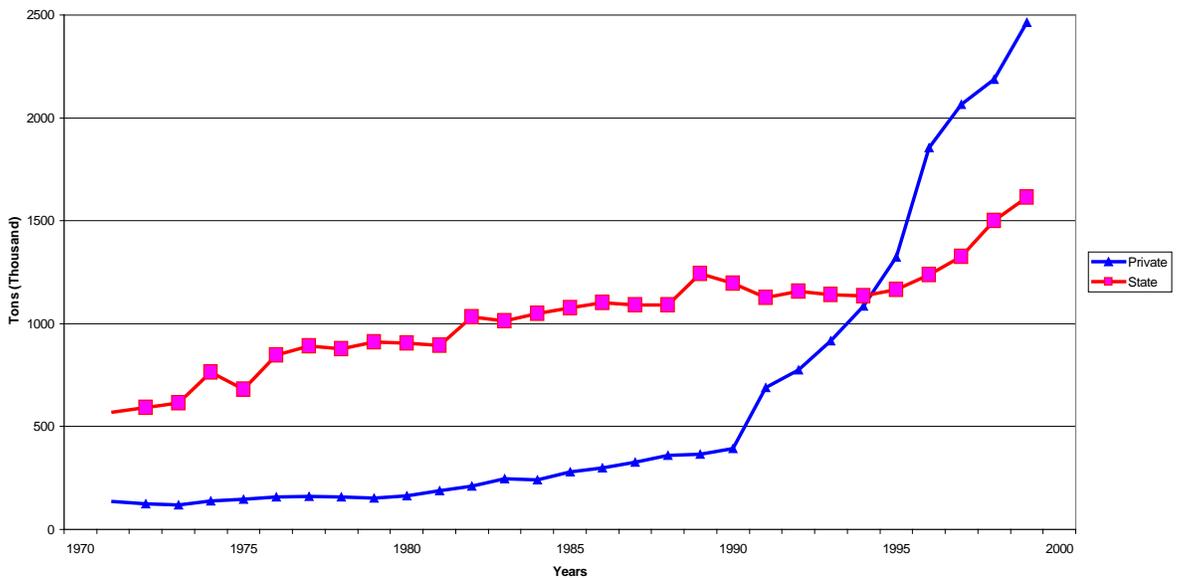
Source: MIDEPLAN. www.mideplan.cl

⁴⁵ Geri Smith. "China and Chile: South America Is Watching." *BusinessWeek*. Online. 18 November 2005.

⁴⁶ John Rector. *The History of Chile*. Westport: Greenwood Press, 2003, 17.

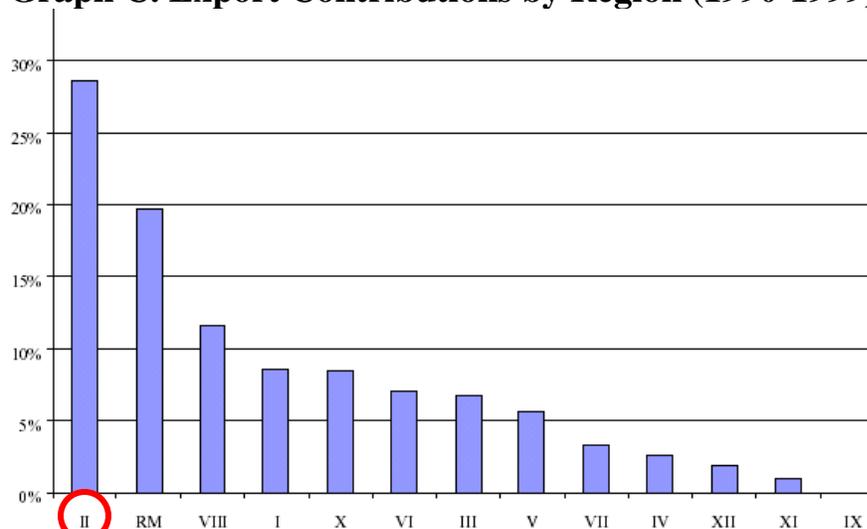
⁴⁷ Prior to October 2007, there were 13 operative regions in Chile. There are currently 15 operative regions. (The Metropolitan Region, or "Región Metropolitana" (RM) counts as a region.

Graph B. Evolution of Chilean Copper Production: Private and State Owned Firms
(Thousands of metric tons of fine copper content)



Source: Patricio Aroca, *Diversification and Development in Local Economies Based on Mining Sector*, Presentation 2007.

Chile's neoliberal economic policies are still in effect today. Chile has seen three elected governments since Pinochet's removal from power in 1990. None, however, including the present Socialist-led government, has broken sharply with the neoliberal economic model instituted by the dictatorship. For years, these post-Pinochet Concertación governments (a coalition of the Christian Democratic and Socialist parties) were content to administer the economic boom that had begun in the latter years of the dictatorship. Graph B shows that although state-owned firms have been producing a steady growth of production, the amount of copper production by private firms has increased tremendously, especially after 1990 when Pinochet was removed from power. Graph C exemplifies that after 1990, Region II still contributed the most in exports.

Graph C. Export Contributions by Region (1990-1999)

Source: Meller et al. 2002.

This model of economic growth seems to be working for the country at the present time, for there is very little opposition to it in the political sphere. However, the question of whether this method of economic growth is sustainable is still debated. In contrast to modern day successes, Chile's history provides a warning of the economic challenges associated with mineral dependence.

Early Trade and Mining – The Beginnings of Economic Activity

Though generally deemed inhospitable, it was the arid climate of the Atacama that helped spur the desert's first period of industrial development. In the 1830s, prospectors found surface deposits of caliche, a raw nitrate formed over millions of years.⁴⁸ Without vegetation to absorb it or rainfall to flush it away, the "white gold" encrusted much of the desert's surface. Nitrates were urgently needed in Europe at the time to manufacture explosives and fertilizers. British and other European mining companies arrived with know-how, and by 1895 the nitrate trade to Europe was thriving,

⁴⁸ Vesilind, 46.

supplying Chile with more than half its income.⁴⁹ Soon thousands of workers were migrating to the Atacama's hundred-plus *oficinas salitreras* (nitrate collection and processing depots), built in the starkest, most inhospitable parts of the desert. The nitrate-era laborers were a mixture of immigrants, unskilled rural workers, and unemployed men from overcrowded Chilean cities.⁵⁰ In the last half of the 19th century, ambitious English mining engineers set up their enterprises in the desert and imposed a culture of time clocks, tennis courts, and Sunday suits.⁵¹ Ordinary laborers were treated less well: Bosses exercised nearly complete control of workers, who were often paid with tokens good only at the company store. The nitrate industry became fertile ground for new, radical concepts of class struggle and labor unions. When the industry bottomed in the 1930s, thousands of laid-off workers headed south to the cities in anger and with communist ideology in their heads.

Fishing, the Atacama's second economic surge, began twenty years after nitrates went 'belly-up'. Fish have always flourished along the Chilean coast because upwelling carries very cold water from the depths, bringing nutrients close to the surface where sunlight triggers profuse plankton growth that fattens up the fish.⁵² Between 1950 and 1980 thousands of unemployed nitrate miners found work on the sea. Until 1994, the port city of Iquique had a dozen processing plants that processed – anchovies, sardines, jack mackerel, and sea bass. Nearly 90 percent of the catch was ground into meal, which became food for pigs, chickens, and other livestock in countries that imported the good from Chile. Fishing has not been a stable market for the Antofagasta Region either. There

⁴⁹ Simon Collier and William F. Sater. *A History of Chile: 1808-2002*, Second ed. Cambridge: Cambridge University Press, 2004, 14.

⁵⁰ Collier, 15.

⁵¹ *Ibid*, 16.

⁵² Vesilind, 46.

are speculations that climatic changes affected fishing in northern Chile.⁵³ Iquique was the biggest fish-meal port in Chile, but most plants were owned by international corporations that did not remain in the region when profits plummeted.

When the hey-day of fish-meal production ended, many workers drifted inland looking to snap up new jobs in the Atacama Desert's copper mining industry. All but two of the seafood-processing plants are gone, but the coastal city of Iquique remains an important port city for trans-Pacific trade, and the fish-meal industry shows signs of reviving.⁵⁴ Because of their easy access to open waters, coastal cities along the Antofagasta Region remain economically important although their purpose might change.

Copper-mining and city growth in the Atacama

With the decline of nitrates in the 1930s, copper soon became the most valuable resource. The rich copper deposits served as the corporate anchors for giant mining industries. Huge mines developed such as Chuquicamata, Minera Escondida, Portrerillos, and El Salvador. In this study, the companies Codelco, formerly Anaconda of the Chuquicamata mine, and BHP Billiton, of the Minera Escondida mine, will be examined. The economic significance of these companies (and others) are important to development in both the Antofagasta Region and Chile.

Before Codelco was a state-owned company, it was a private U.S. mining company called the Anaconda Company, whose production of copper boomed during the earlier part of the century. The demand for copper at the time was high due to the World Wars. With the U.S. entry into World War II, Anaconda produced 2,556,000,000 pounds of copper. This amount increased nearly six times in the next four decades. Much like in

⁵³ Ibid.

⁵⁴ Ibid.

the early days of Anaconda's international expansion, repressive political practices had cleared the way for promotion of a free-market economy. The copper companies won concessions that included lower tax-rates, low base production figures, and free import of equipment. As corporate profits soared and production in Chile escalated, a few benefits trickled down to the workers when Anaconda announced a five-year expansion plan in Chuquicamata that included construction of a hospital and more housing.⁵⁵ In this favorable economic climate, Anaconda netted its largest annual income to that time: \$111,501, 358 in 1956.⁵⁶

Anaconda gained its state-ownership status when the Frei administration nationalized most copper industries. Codelco's history begins with the creation of the "Copper Office" of the Department of Copper by the Chilean government in 1955. Under President Frei, Congress sanctioned a law that would transform the Copper Office into the Copper Corporation of Chile, which is currently Codelco. With the constitutional reform that nationalized copper in 1971 during Salvador Allende's government, full ownership of all copper mines and copper fields in the country were transferred to the state. The creation of the *Corporación Nacional del Cobre de Chile*, as it is currently known, was formalized under the Augusto Pinochet administration.

Codelco's motto is "Producing the Future," as it refers to the revenue it generates for the economic growth of Chile. Codelco made over 9 billion US dollars in profits in 2006, and 1.3 billion of these profits are reserved for the Chilean Armed Forces.⁵⁷ It is the world's largest copper producer with an estimated 200 years of copper reserves.

⁵⁵ Isaac Marcossou. *Anaconda*. Kingsport: Dodd, Mead & Company, 1957, 53.

⁵⁶ *Ibid*, 54.

⁵⁷ "Codelco reportó excedentes récord por más de 9 mil millones de dólares en 2006." *La Segunda*. www.lasegunda.com/ediciononline. 1 March 2007.

Codelco produces 21% of worldwide annual volume of ore, and its principal production is 99.99% pure copper cathodes.⁵⁸ As of 2004, Codelco also ranks first in the production of rhenium and second of molybdenum, both side products of copper mining. Codelco is not only located in the Antofagasta Region. It is composed of four mining divisions and one industrial division, all located in Northern and Central Chile. The division located near Calama is the Codelco Norte Division, which is a merger of the Chuquicamata and Radomiro Tomic divisions. Though the Chuquicamata mine has existed for nearly a century, Radomiro Tomic has only been in operation since 1995. Because Codelco is a national company, its revenue does not remain in the region but is sent to the national level; therefore, most of its revenue is not reflected in the Antofagasta Region.

Private companies contribute to the economic wealth of Antofagasta. BHP Billiton's Minera Escondida mine is also located in the northern part of Chile in the Atacama Desert, some 170 kilometers to the southeast of Antofagasta. The mineral deposits were discovered in 1981 by a small group of mining experts, mostly Chileans. The construction of the mine started in 1988, and the processing of minerals began in 1990, just a few months after the first democratically elected government terminated the Pinochet dictatorship. With the exception of Exxon's Disputada, it was also the first large private mining operation in Chile. There are several owners of Minera Escondida: BHP Escondida (57.5 per cent ownership), Rio Tinto Escondida Ltd (30 percent), Japan Escondida Corporation, and International Finance Corporation.⁵⁹

Success in the copper industry equaled the sprouting of industrial communities around Antofagasta. Even the ports of the Norte Grande that served as service centers and

⁵⁸ "The Corporation FAQ." Codelco. 23 May-June 2007. www.codelco.cl.

⁵⁹ BHP Billiton Annual Report 2006.

transshipment outlets for the nitrate works and copper mines were significantly growing. These cities were important to the companies for exporting their minerals. At the time of the sprouting of these major mines, these ports seemed more like overgrown villages than real cities, though in several, especially in Iquique and Antofagasta, luxurious mansions and new public services gave the wealthy a sense of living in modern comfort.⁶⁰ This was made possible by importing fuel, food, and even topsoil for plazas while piping water over great distances.⁶¹ Antofagasta today, on the edge of the desert's vast expanse, is one of Chile's fastest growing cities. It is the center of the Chilean copper industry, and world's largest copper port. An island between sea and desert, it is kept alive by caravans of trucks, water pipelines, and a railroad linked to the mines. The city has flexed from 183,000 people 20 years ago to 300,000 today.⁶² Inside the huge new shopping mall, Mall Plaza Antofagasta, one can see the highlights of the social life in the city. Although the city is a transforming one with an emergent population, many still do not consider the place home. "The area does not particularly resonate with these people," according to a local newspaper editor. "They don't put their money or their emotion into Antofagasta. They do their jobs here, then go home for the weekends."⁶³

Changes are in store for the city of Antofagasta in order to accommodate for the growing population. As a copper port, Antofagasta's days are numbered: in the next four years the government will shift much of Chile's copper shipments to a new deepwater port in Mejillones, 40 miles north, and leave Antofagasta as the administrative and

⁶⁰ Loveman, Brian. *Chile*. Oxford Oxfordshire: Oxford University Press, 2001. p. 23.

⁶¹ Ibid.

⁶² Vesilind, 47.

⁶³ Quoted in an article by Prilit Vesilind for *National Geographic*. Vol.214 Issue 2. Aug. 2003: 46.

commercial center of the region.⁶⁴ Planners will transform the threadbare portion of the present port into a waterfront development. The chief of the port hopes that the makeover will be a turning point, a coming-of-age for the city of Antofagasta and, by extension, the entire Atacama. “There is no real alternative for copper,” he says. “We need to build our future now, while we have the money, improving the quality of life so people will make roots and stay. A lot of us came for one or two years and planned to go back to Santiago. But now I have a house, my children go to school here – they’ve become Antofagastans.”⁶⁵

The Land of Sun and Copper

About three hours away from the city of Antofagasta is a mining town called Calama. Calama is currently the closest city to Codelco’s Chuquicamata mine, the largest open-pit mine in the world. Located in the heart of the desert, is the largest oasis in the Atacama, and patches of green, and somewhat arable land, is found hugging the Loa River in southern part of the city. This river is the main water source of the oasis; determined farmers plant few types of vegetation, such as tomatoes and cucumbers, using special irrigation systems. The principal economic activity for Calama, as with the rest of the Antofagasta Region, derives from the nearby copper industry. Sub-contracting businesses that serve the mines are found in the town, and very recently, so have larger recreational businesses. Chain restaurants, mostly those popular to Chile, dot the town, and two years ago Mall Calama was built across from Codelco’s Corporate Building, which is also located in the heart of the city. The economic development has been most prominent type of development in the community.

⁶⁴ Ibid.

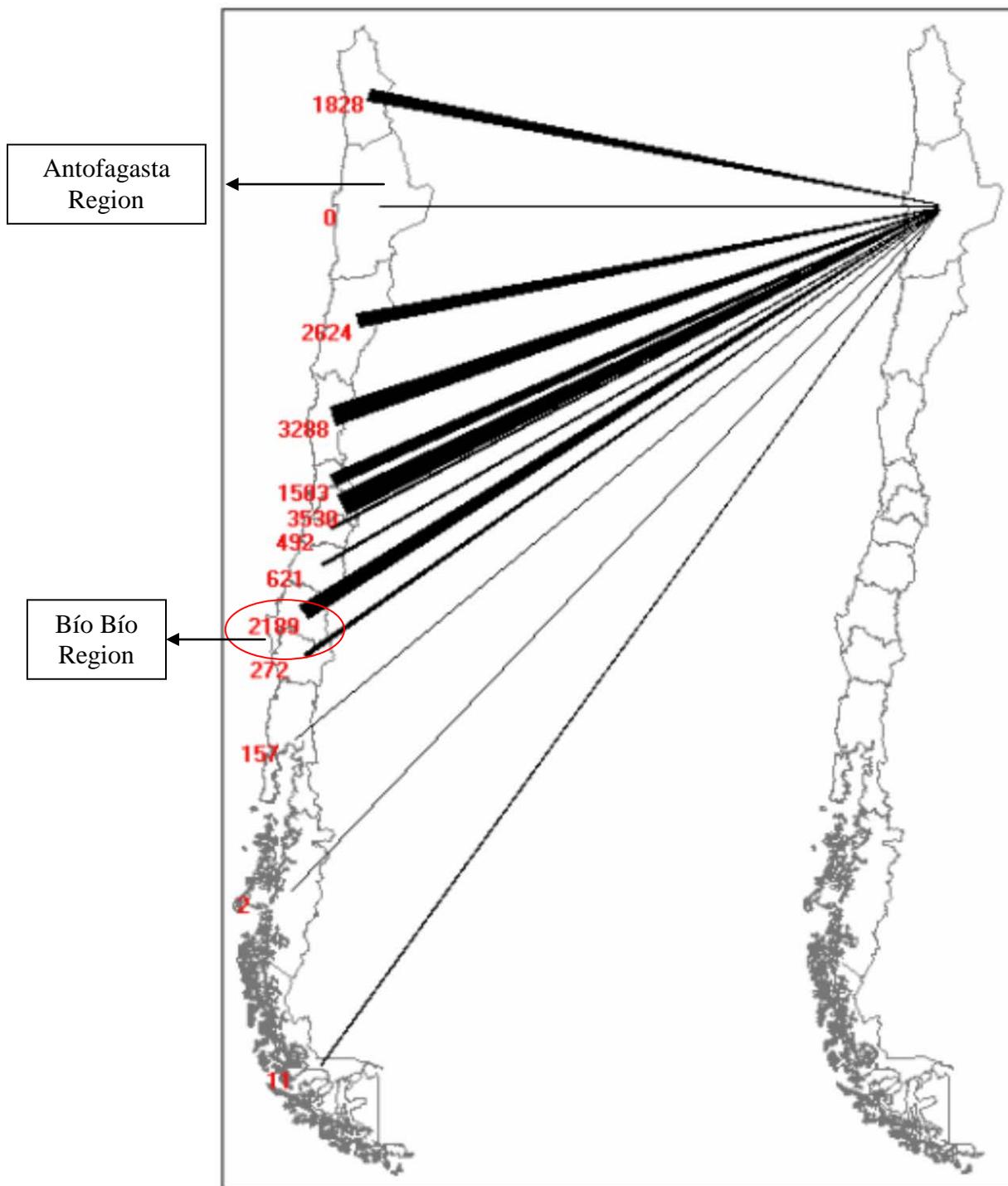
⁶⁵ Ibid.

The rapid growth in businesses is not the only type of growth Calama is experiencing. The population of Calama has increased over the past decade, from about 120,000 to 140,000.⁶⁶ Calama, as well as the region of Antofagasta, experiences a “floating” population. According to a representative from the municipality, about 40,000, or 29 percent, of the city’s population is “floating.” This means that people who live and work in Calama do not stay there for long periods of time. Instead, they commute from other regions to work in the copper industries. The following map shows the origin of over 16,000 workers that commute to the Antofagasta Region. One of the interesting characteristics of this process is the distances. Less than a third come from the neighboring regions, while more than 10 percent travel more than 2000 kilometers to arrive to their jobs. 2189 of the workers in the Antofagasta Region declare living in the Bio Bio Region (Region XIII).⁶⁷

⁶⁶ “Indicadores de Población.” Provincia El Loa. Info Pais, Gobierno de Chile, Ministerio de Planificación y Cooperación. <http://sir.mideplan.cl/>. 2005.

⁶⁷ Atienza, Miguel. “Migración interna y desarrollo en Chile: diagnóstico, perspectivas y políticas”, 2007.

Origin of Labor Mobility in the Antofagasta Region



Source: Miguel Atienza, “Migración interna y desarrollo en Chile: diagnóstico, perspectivas y políticas”, 2007.

The “floating” population problem is one of the many challenges of development Calama faces. The continuous change in population created an impediment on decisions for community development projects, for most people who worked in the mines seldom intended to stay in the city.⁶⁸

Consequences of mining in the Atacama

Whether the “Chilean Miracle” has proven sustainable or not, there are other consequences that raise concerns within the nation and surrounding communities around the copper industry, as the Chuquicamata case exemplifies. Environmental concerns are oftentimes outspoken in the communities that surround large industries. As emphasized before, the Loa River is the main water source for habitants of the Atacama Desert. With the rising population in this region, the demand for clean water is also growing. The mining industry has been accused of emitting chemicals into the water source, but other research has discovered that found ‘contaminations’ are also results of natural causes (such as high levels of minerals in the water).⁶⁹ Other research found more evidence that the mining industry represented a relatively high risk for the river habitat – heavy metals released by the mining industries have lead to pollution episodes that occurred in some areas of the river leading to the death of thousands of fishes, invertebrates, and birds.⁷⁰

The primary environmental threats to the Antofagasta region are air pollution from vehicle and industrial emissions and water pollution from untreated industrial sewage or mineral deposits, and soil erosion. Toxic emissions from copper smelting have affected a broad population that includes nearby residents and the miners themselves. As

⁶⁸ Patricio Valencia. Industrial Civil Engineer, Municipality of Calama. Personal Interview. 15 May 2007.

⁶⁹ OCHA. UN expert assessment mission in connection with acute pollution of the Loa River, July 1997.

⁷⁰ Madeleine Hamame. *Regional Risk Assessment in Northern Chile*. Sweden: Environmental Systems Analysis, Chalmers University of Technology, 2002.

a result of the industrial expansion of Chile's economy during the past twenty years, per capita energy use and carbon dioxide emissions in the country have increased significantly.⁷¹ Environmental deterioration is a common yet oftentimes unintended consequence to free-market policies. As the state takes steps to relieving the problem, much responsibility is expected from the industries themselves by both local and international communities.

Proposals for new environmental legislation continued to be studied in close consultation with the mining industry. In 2000, La Comisión Chilena del Cobre (The Chilean Commission of Copper, COCHILCO), was involved in drafting proposed legislation to govern mine closures and was in the phase of seeking the opinion of interested parties.⁷² In December 2000, the Ministry of Economics, Mines and Energy was expected to announce a project to establish norms for acid mine drainage.⁷³ As of 2000, companies that wished to develop a mining project in Chile had to follow the legal regulations prescribed in law No.19300, Environmental Basis.⁷⁴ The Chilean government has made it a goal to maintain a balance between the environment and its economy.

⁷¹ P.F. Knights. Chile in Mining Annual Review: Mining Journal Ltd. V. 1.0.

⁷² Velcaso, Pablo. *The Mineral Industry of Chile*. U.S. Geological Survey Minerals Yearbook, 2000, 1.

⁷³ Knights.

⁷⁴ Velcaso, 1.

Chapter Three: Company and Community: Promoting Sustainable Development

In societies where industries play a predominant role in development, oftentimes industries provide the community with specific incentives to improve the welfare of the community. In the case of the city of Calama and the state mining industry, Codelco, the attitudes toward sustainable development differ on several issues, such as social and environmental issues. Codelco has recently launched a development program called Buen Vecino, or Good Neighbor, that aims to improve environmental and social conditions of the nearby communities, including the city of Calama. The municipality of Calama, on the other hand, has its own programs for development that it wishes to implement in the community. These conflicting views of development could hinder the community's potential for rapid developmental growth in the future. In this chapter, the state company of Codelco and their initiative for sustainable development under the Buen Vecino program will be examined. Being a state company, its reasons for promoting social programs may be different from private industries. This chapter will also contrast social contributions by private industries, including Anaconda Inc. and BHP Billiton's Minera Escondida.

Anaconda

Before Codelco was considered property of the Chilean state, the mine at Chuquicamata belonged to Anaconda Inc., a U.S. company. Actual operations at the Chuquicamata mine began in May 1915. A seventy-mile pipeline from a stream in the

Andes brought much-needed water; roads were built, and through a long transmission line flowed ample electric power. All this was on a scale never attempted before in a mining venture at this time. Because of its reserve and massive development, Chuquicamata soon became a byword throughout the domain of copper. A community of 15,000 people, including workers, officials, and their families, sprang up, creating the small mining town bearing the name of the mine itself: Chuquicamata.⁷⁵

The population of Chuquicamata grew rapidly. About four decades later, Chuquicamata emerged as a town with a population of 25,000 of which 5,000 were workers.⁷⁶ The author of *Anaconda*, Issac Marcossou, described the town as a “sort of League of Nations with fifty-five different nationalities represented.”⁷⁷ Every possible facility was afforded by the workers. They paid nothing for rent, electricity, or water, and they purchased their food and clothing at three company stores. Housing for the workers was constantly modernized and increased, with two-hundred units built every year. Medical attention was also free, and the hospital was considered one of the best in Latin America, for “the staff [was] sent in relays to the United States or Europe every three years for refresher courses and to keep abreast with medical advance.”⁷⁸ The 3,000 children had roomy schools and playgrounds, and both English and Spanish schools were included in the courses. The author boasts that the company financed four scholarships to Chilean citizens so that they could take up graduate work in the United States (later, these students ended up working for the company).⁷⁹ The author also mentions that motion picture theatres were built to show the latest American films, and the transportation was

⁷⁵ Marcossou, Isaac. *Anaconda*. Kingsport: Dodd, Mead & Company, 1957, 200.

⁷⁶ *Ibid.*

⁷⁷ *Ibid.*, 207.

⁷⁸ *Ibid.*, 208.

⁷⁹ *Ibid.*

adequate for there was a good road built between Calama and Antofagasta. Another author who studied this city mentions that “Anaconda displayed benevolent paternalism at its finest in its generous orchestration of community spirit.”⁸⁰

The author also mentions an “interesting change” in the conditions among the residents of the Chuquicamata town. In 1948, 45 percent of the workers were single and fifty-five percent married. One decade later, the number of single men had decreased to 37 percent, meaning that 63 percent were married.⁸¹ The author calls this “evidence of stability in the community.” The sons and daughters were staying in Chuquicamata instead of leaving as they formerly did.

When Anaconda existed, it promoted elements of corporate social responsibility before that phrase was used in Codelco’s future sustainability reports. Anaconda Company created a welfare program to help the members of its surrounding community. The “Help Chuqui Club” was a program designed to provide medical attention for both parents and children. Sanitation in the homes was a priority to the company, for it was important to the company and the town to maintain a healthy environment. The “Help Chuqui Club” is an example of how Anaconda exercised its awareness of development in the society it influenced.

In Chuquicamata, Anaconda operated directly as architect of a company town, taking an overtly paternal approach to the construction of community. In many ways, the company provided well for its residents, offering workers material benefits and a quality of life better than that of most Chilean laborers. The company both provided the makings of community needed for a steady, reliable workforce. Ironically, the corporate efforts at

⁸⁰ From Jane Finn’s Tracing the Veins, 103.

⁸¹ Marcossou, 209.

community building worked well enough to promote a sense of community solidarity that became the base from which to demand greater corporate accountability.

From Chuquicamata to Calama – City Initiatives for Development

As mentioned previously, the state-owned company Codelco now owns the titles to the Chuquicamata mine. The town of Chuquicamata remained, and in many ways still functioned as a company town. Chuquicamata once supported a population of twenty-five thousand people, but that dwindled by half in the early 1990s. Nearly four years ago, because of high levels of toxins emitted into the air, the entire town of Chuquicamata moved to the nearby town of Calama, where residents no longer had the luxury of having their housing and utilities paid in the company town. Chuquicamata today is a boomtown; an example of failed efforts to suppress contamination levels.

The cost of the population move from Chuquicamata to Calama brought social and economic strife to the city. The municipality is now responsible for paying for potable water, electricity, and other utilities to the new neighborhoods of Calama and also to the new city infrastructure for the growing population to enjoy. According to Patricio Valencia, an industrial civil engineer for the municipality who also manages some projects of Buen Vecino, the Chuquicamata move cost the city over \$400,000,000 (Chilean pesos) the first year, and Valencia verified that the cost was growing each year. The city had to pay much more than their budget was worth, creating a deficit. Codelco made an agreement aiming to alleviate the city's financial problems due to the move, but many of the implementations of these projects are yet to be seen.

The municipality of Calama and Codelco made arrangements for development projects years before any financial agreement was made, for the Chuquicamata move had

been planned about a decade before the transition began. The mayor of Calama, civil engineers from Codelco, and representatives from the company's General Management approved the agreement on December 11, 2001.⁸² In this "strategic alliance," Codelco agreed to contribute annual funds toward various projects, especially toward the Chuquicamata move. The "strategic alliance" document lists preliminary statements about the agreement that defines the purpose of the projects. The areas of development they wish to address are "education, health, city security, community equipment, design and social development in general."⁸³ The document also states that Codelco has particular interest in the formation of these projects, as it has made a significant investment to Calama's development initiative. Aside from the fact that many of Calama's councilmen are or were formerly associated with Codelco, the company appears to have great influence in making decisions for development plans in the city.

The strategy proposed by the agreement puts much emphasis on infrastructure and social development (Table 3). According to Patricio Valencia, the majority of the projects that have begun have been infrastructural projects, such as building roads and street lights. The amount reserved for city security is a combined figure that includes funds for vehicles and delinquency centers. The development project also includes the restoration and extension of city parks, especially the Poniente Park, located near one of the many of the neighborhoods built for the new residents from Chuquicamata (hence the larger amount). The Loa Park funds are for the maintenance of the small sector of the

⁸² Formal agreement between Municipality of Calama and Codelco. "Alianza Estratégica de Cooperación Convenio Entre Ilustre Municipalidad de Calama y Codelco-Chile, División Chuquicamata." Signed by Esteban Velásquez Nuñez, Mayor of Calama, and Carlos Rubilar Ottone, General Management, Codelco-Chile. 11 December 2001. A copy of the document was given to the author for research purposes.

⁸³ Ibid. "educación, salud, seguridad ciudadana, equipamiento comunitario, planificación y desarrollo social en general."

river and the restoration of archeological museums. At the time of the signing of the agreement, there had been no set amount planned for support for indigenous communities and for potable water. The document states that these funds would be given

Project	Amount (Chilean pesos)
Light fixtures	250,338,121
City security	62,400,000
Social development	250,000,000
Poniente Park	100,000,000
Loa Park	50,000,000
Municipal Pool	20,000,000
Indigenous communities	n/a
Extension of Potable Water	n/a

annually to the Municipality to assist the costs of the project. The document does not include a timetable for these funds, but since the signing of the agreement, five years ago, the total amount received by the municipality has only been about \$950,000,000 (Chilean pesos).⁸⁵

Valencia also mentioned that the city itself has recently taken its own initiatives toward development.⁸⁶ Beyond a growing population to satisfy, the city is focused on keeping Calama clean and modern, for Calama is a rapidly growing town, and many businessmen, especially foreign, visit Calama. Valencia stressed the importance of maintaining a good appearance so that the copper industries mainly benefit from businessmen who had a good impression of the city. Environmental sustainability has also been added to the city's main agenda, an effort that has grown stronger in the past two years. This may be because of the city's new strategy to beautify Calama. The city

⁸⁴ Alianza Estratégica de Cooperación Convenio Entre Ilustre Municipalidad de Calama y Codelco-Chile

⁸⁵ Interview with Patricio Valencia.

⁸⁶ Ibid.

also created a new department within the municipality that focuses on recuperating the oasis and promoting environmental education. According to Valencia, the focus on sustainable development is a new goal that the city wants to maintain and expand for the future.

Today, Codelco has programs for development in the communities that surround the mines, including Calama. Though these programs target health, educational, and other social challenges of the community, most of these programs are geared toward easing the transferring population from Chuquicamata to Calama. Calama lacked the infrastructure that its own population needed, such as water treatment facilities and paved roads; and with the new population of Chuquicamata in town, Calama faces new challenges for development not only for the present, but for the future, so that they do not end up with the same fate as Chuquicamata.

A Good Neighbor : Codelco's Buen Vecino

For many years, Codelco has tried to maintain good relations with the community of Calama to improve its image within the city. Usually, their attempts to promote community development involved contributions to the community that were of short-term value, such as donating old desks and chairs to local schools.⁸⁷ Codelco has recognized the importance of these growing communities and attempts to contribute to their well-being. They promote projects that will make cities appear attractive for future workers, such as city parks.⁸⁸ These projects are not just a part of the urban infrastructure and employee welfare; it also includes programs to improve health, education, and the environment of the communities that surround the mines. The industry has taken steps in

⁸⁷ Ibid.

⁸⁸ Patricio Aroca. "Impacto de la Minería en la II Región." *Dilemas y Debates de Cobre*. Patricio Meller, ed Santiago: Dolmen Ediciones, 2002.

past several years to improve the conditions of the community with long-term projects for development. These projects appear as a friendly gesture to the community, but there are reasons behind these initiatives that reflect the industrial motives of the projects.

The most recent program of Codelco for sustainable development is called “Buen Vecino,” or Good Neighbor, which was created to improve environmental and social development for each division of Codelco. According to Codelco:

“Codelco Good Neighbor program works continuously with the communities of its mining area in favor of the economic development, respect of environment and social progress. Its objective is to contribute to the generation of favorable conditions that stimulate and strengthen the development of the surrounding communities of its operations.”⁸⁹

Each division of Codelco has its own version of Buen Vecino that corresponds with different communities in the country. Division Codelco Norte generally works with the indigenous population of the Alto Loa region (the area above the Loa River), small pueblos near the mines, and especially Calama, where the greater population of its workers resides.

The ideas for Buen Vecino have existed since the middle of the 1990s, but the projects have been in effect since 2003. The name “Buen Vecino” is only an umbrella name used by the company to represent several projects for development. The plans for Buen Vecino that affect the community of Calama are The Strategic Plan for Urban Development of Calama (PEDUC), which includes projects for expansion and industrialization of the city, Integration Plan of New Calama (PINC), which implements the movement of Chuquicamata to this city, and the Codelco Agricultural Agreement Program – Government Region II (PAC), that supports the agricultural production of the region. Other projects of the agreement between the municipality and Codelco include

⁸⁹ “Codelco Good Neighbour.” Codelco. May-June 2007. www.codelco.cl.

the construction of the recreational infrastructure, the security of the city, and the extension of potable water, the construction of new streets, and also, the project of New Calama, which is the movement of the residents of Chuquicamata to Calama.

Many of the habitants that live in Calama are associated with Codelco; they work through services for Codelco or they work for Codelco directly. Because the industry understands that the families of their workers live in the city nearby and that company operations affect the community, Buen Vecino strives to strengthen the relationship with the communities in the vicinity of the mining operations by way of activities that integrate the welfare of the industry with the cooperation of local towns like Calama.

For the community to benefit from this program, the company had to establish an agreement with the municipality of Calama. An existing agreement allows the municipality to receive funds from Codelco. The projects of Buen Vecino cannot function without the support of the municipality due to a law that the company has to comply. Codelco, by law, cannot contribute any direct donation and all liquid utilities must be turned into the state of Chile.⁹⁰ Through agreements and alliances, the parties combine forces, supporting a better quality of life for everyone.⁹¹ Basically, the law says in terms of donations given by the company, the company cannot submit funds directly to organizations. This is the same for the private companies of Chile.

Calameños on Buen Vecino

Though the company seems to pride itself on the “successes” of Buen Vecino, very few Calameños have even heard of it. Only residents who worked in Codelco or were affiliated somehow with the company, such as having a family member who works

⁹⁰ Leonardo Figuerda. “Nuestra relación con la comunidad.” Gerente de Sustentabilidad. Codelco Presentation. Given to the author for research purposes.

⁹¹ Ibid.

there, had heard of Buen Vecino.⁹² The projects of Buen Vecino are not actually defined by the community, but are perceived as the projects that Codelco has taken to improve the city for the creation of New Calama. Residents of Calama understand that the company is building new homes around town and improving roads and other infrastructures, but these are only seen as the company's initiative for re-building another Chuquicamata in their city.

Many expressed their dislike for the sudden increase in population in Calama. Calameños are unhappy that the streets are overcrowded and the familiarity of the small town is diminishing. The parts of the city that actually seem to be improving in infrastructure are near the neighborhoods where Codelco and Calama had built new homes for the displaced Chuquicamatans. One woman mentioned that wider roads have been built and new street lights were installed near her home, but also noted that the street led to a major road that the company used to transport its products. There are other parts of the city that desperately need such infrastructures, but they are not a priority to the company⁹³. Another person mentioned that there are not enough resources for the new residents of the city. There were not enough resources for the original population of Calama, and the rising population is putting a strain on development in the city.

Many Calameños feel that the new residents of Calama receive special treatment in the community. The "New Calameños" from Chuquicamata are those workers who earn higher wages and are naturally higher in social status, compared the general low-income society of Calama. One Calameño mentioned that every person that arrived from

⁹² Observed in a study of 40 Calameños. Of the 40, only 5 had heard of Buen Vecino, even after explaining the program in detail. Centro Educacional Integral Adultos, 14 May 2007.

⁹³ The author spoke with a woman from Calama about social infrastructures in the city. She was part of the group of 40 Calameños.

Chuquicamata owned a car, even multiple cars, whereas most Calameños do not. Knowing that the projects of New Calama and Buen Vecino are only made possible with consent from the city, many Calameños do not attend or vote in the frequent city meetings that discuss many of these projects with the community⁹⁴. A Calameño said that he only would only attend a meeting when a project is built near his home.

Development toward the Environment

Concerning the environment, Calameños agree that the preservation of the largest oasis in the Atacama Desert is essential. When asked where Calama would be without the presence of Codelco, one Calameño shouted, “Green!”⁹⁵

Codelco already realizes the importance of protecting the environment en Calama. According to a Codelco Sustainability Strategy Report from 2005: “The closeness of Calama to the projected operations imposes major environmental and social demands...” The report also recognizes the zone as “saturated in MP-10,” an atmospheric contamination.⁹⁶ The company has policies toward the environment, but really, there are very few policies that refer to air pollution. In the period between 2000-2005, Codelco invested about US \$293 thousand, but as the following table shows, there has been a decline in investment toward the environment from the company.⁹⁷

⁹⁴ Observation in a study of 40 Calameños.

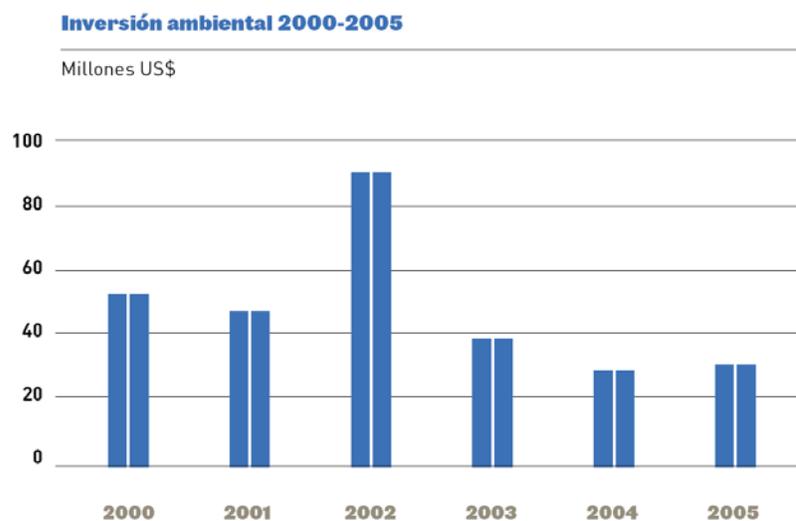
⁹⁵ Ibid.

⁹⁶ Estrategia de Sustentabilidad. Inversiones Medioambientales. Codelco. 2005.

This report was given to the author by the Public Relations Department of Codelco Norte.

⁹⁷ Codelco Reporte de Sustentabilidad. 2005.

Graph D. Environmental Investment 2000-2005 (Millions US\$)



Source: Codelco: Reporte de Sustentabilidad 2005.

Radomiro Tomic has recently created an ecological center to promote environmental sustainability in the region. Samuel Orellana, from Environment and Quality Management, explained that “Codelco has received an enormous amount of money to improve its processes.”⁹⁸ Though he did not mention the amount of money, he added that “it is to improve the air. The smoke that leaves the chimneys now is nothing to the smoke from ten years ago.”⁹⁹ The company invested in plans for reducing smelting pollution in a total of US \$220.1.¹⁰⁰

The projects of Buen Vecino do not specify its ambitions to improve the quality of air, but Buen Vecino mentions other ways to improve the environment with the reforestation of trees in Calama. Though Calama is indeed located in the desert, the oasis is still home to few trees that do not require much water to grow. Codelco believes that keeping Calama “green” means planting trees grown in their ecological center around the

⁹⁸ “Codelco ha capturado una enorme cantidad de dinero para mejorar sus procesos.”

⁹⁹ “Es para mejorar el aire. El humo que sale de las chimeneas ahora no son nada al humo de diez años atrás.”

¹⁰⁰ Codelco Reporte de Sustentabilidad. 2005.

oasis. “Ten years ago, Calama was almost a desert,” said Orellana. “Codelco [Radomiro Tomic] produces 5 thousand trees annually...with the support from Conaf.”¹⁰¹ With these projects for reforestation, Codelco works with Conaf, the national environmental department, not directly with the municipality. However, the municipality also has a partnership with Conaf that works with Codelco. Where do the trees go? “We deliver these trees to institutions, the municipality, schools, and nearby small towns,” states Orellana. In effect, Codelco aids the community indirectly.

A Calameño, Alex Terrazas, agreed that he had seen the trees planted by Codelco, but “the trees that Codelco plants are not for this area.”¹⁰² Only three types of trees are native to this environment, and Codelco only plants one type that is local to Calama. In addition, Codelco may not work directly with the municipality with the reforestation, but the municipality allows the forestation of the trees in the city. Terrazas adds: “The municipality says yes, Codelco can plant them...but they [Codelco] do not maintain them. The municipality has to maintain the trees, but the municipality does not have the money to maintain them.”¹⁰³ Also, the trees do not remain in the same place where the company plants them because people oftentimes “steal them,” “cut them,” and in addition, the trees “die because of the heat.”¹⁰⁴

The municipality has its own department for the environment, also, and it is very new. It began in 2002 for the reforestation of Calama with four trees that are native to the region. The types of programs that the Municipality supports, in a plan called “Plan

¹⁰¹ “Diez años atrás, Calama era casi desierto.” “Codelco produce 5 mil árboles anuales...con el apoyo de Conaf.”

¹⁰² “...los árboles que Codelco planta no son para esta zona.”

¹⁰³ “...la Municipalidad dice sí, Codelco los puede plantar...pero no los mantienen [Codelco]. La municipalidad tiene que mantener estos árboles, pero la municipalidad no tiene el dinero para mantenerlos.”

¹⁰⁴ Terrazas, Alex. “los roban,” “los cortan”... “y los árboles mueren a causa del calor.”

Calama Ecological Community” are projects that include “One Family, One Tree”, where the city provides a family with a tree to plant, a recycling plant for solid wastes, and environmental education. This is on a budget of about US \$10,000 annually.¹⁰⁵ Such programs teach younger students of Calama the importance of protecting the environment and show them how to properly plant trees.

The Loa River a very important concern to both the community and the industry. Codelco uses a large amount of water for its copper production, and the company uses most of the water from the Atacama’s largest water source, the Loa River. It is more convenient to use water from the river than transporting water from the Pacific Ocean. The protection of the Loa River is another goal of Buen Vecino. The main concern is the depth of the water, which many Calameños say has lowered tremendously over several years. According to Orellana, the company has a reputation to maintain. “We have to take care of our environment. Codelco takes water from the Loa River...but if Codelco consumes more water than what is allowed...we would have fines.”¹⁰⁶ In May 2007, the company, as well as various large businesses, schools, the municipality and Codelco Norte collaborated to have a clean-up of the Loa River. This was the first time the company had taken an initiative to clean the River, and they expect to make this an annual event in the future.

Even though other themes of Buen Vecino include improving education and health in the community, there have not been many reported results on its progress. In a non-published presentation given by the corporate office, the relationship that Codelco has with the community also involves health and education, but the initiatives for

¹⁰⁵ The author spoke briefly with the head of the Environmental Engineering department in Calama.

¹⁰⁶ “Tenemos que cuidar nuestro entorno. Codelco saca agua del Río Loa...pero si Codelco consume más agua de lo que está permitido...tendría multas.”

development in these areas are with the alliances with government organs, such as their agreement for forestation with Conaf. The health projects, proposed by the company, however, are directly aimed at the community of Calama, while the education projects aim to benefit the indigenous populations in the Alto Loa region (the area to the east of Calama where most of the indigenous pueblos are located). The education project that Codelco pursues for Calama is mainly environmental education.

Health development has been a major issue not only for Calama, but for the Antofagasta region, which seems to be one of the poorest regions in terms of health care.¹⁰⁷ Working conditions in the mines have improved greatly over the decades, but the risks of accidents and respiratory illnesses remain. Codelco offers its own health service to its workers; in 2005, Codelco opened a new hospital for its workers in Calama to replace the hospital that had been destroyed in Chuquicamata. Both the general hospital of Calama and the Codelco hospital, though located in a place near a potentially dangerous work environment, have no facilities for grave injuries. If a person is very injured or ill, they would have to go to Antofagasta because Calama does not have an intensive care unit. In addition, family welfare seems to be an important health issue for the company. Codelco, having a special alliance with the municipality, aims to fund improvements in family health care services, including mental health, and domestic violence prevention for women.

Potable water is another health concern for the community, especially with the growing population. The volume of clean, potable water that the plant produces is for a small fraction of the population. There has been only one water treatment facility for the

¹⁰⁷ Miguel Atienza. "Luces y Sombras del Desarrollo de la Región Antofagasta." April 2007. Powerpoint presentation at a lecture the author attended at Universidad Católica del Norte, April 2007.

entire city that, according to both the company and the Calameños, is terribly old, malfunctions often, and produces a bad odor. The city continues to experience problems of supplying potable water to all parts of town. According to the municipality, there are still some neighborhoods of Calama that have no water at all.¹⁰⁸ As part of New Calama, the company intends to work with community to add another water treatment facility in Calama.¹⁰⁹

The education system in Calama, as with many parts of Chile, has been a major priority, but there are no direct incentives by Buen Vecino to aid the municipality to improve the system. Codelco Norte only envisioned projects to improve elementary education in indigenous pueblos outside the city. Codelco has policies to benefit the community in the short term, like donating desks and old computers, but beyond these, Codelco is more concerned with education for the indigenous populations than the community of Calama.

Minera Escondida

In contrast to the state-company Codelco, this section discusses the initiatives for development by the private mining industry that also influences this region. Among the other private industries in Antofagasta, Minera Escondida was chosen because it is well-known in Chile for being one of the few private industries that practices “good” corporate social responsibility.¹¹⁰ Apart from being the only large private mining company operating in Chile today that pays taxes¹¹¹, Escondida devotes 1 percent of its pre-tax

¹⁰⁸ Patricio Valencia. Municipalidad de Calama. Interview. 15 May 2007.

¹⁰⁹ Sergio Gibert. “Nuestra relación con la comunidad.” Codelco, División Codelco Norte. PowerPoint. This PowerPoint presentation was given to the author by the Public Relations Department for research purposes. 13 May 2007.

¹¹⁰ Manuel Riesco commends the company for meeting his criteria for corporate social responsibility.

¹¹¹ Riesco, 13. Riesco argues that other private mining industries do not respect the Chilean royalty tax.

profits to projects in Chile, focusing mainly on environmental protection, education, health and community development, with a particular focus on youth.¹¹² Such expenditures amounted to 21 million dollars from 1998 to 2002, channeled through Fundación Escondida, a non-profit foundation, to local communities, universities, cultural events, and several other initiatives.

Fundación Escondida is an initiative very similar to Codelco's Buen Vecino. However, its programs do not center on a specific town, as Buen Vecino had for Calama, for Escondida is not near a surrounding city. The program focuses on social development programs, mainly formal education in Antofagasta and in indigenous communities.¹¹³ It also funds training for first-aid medical attention, and issues scholarships for students wishing to go to medical school.¹¹⁴ Because it does not have a specific town to associate, it works mainly with communities in Antofagasta (where its office and port is), and other general communities in the Atacama.

As Codelco is concerned with the Loa River, Escondida funds a project that tends to the salt lakes in the eastern part of the desert. Escondida is part of a large project centered on the mitigation of environmental impact on the Salares de Punta Negra (the Salt Lakes), which is related to water extraction for Escondida. The company dedicates itself to restoring wildlife there. The president of the company mentioned that the project not only enhanced local confidence in the firm, but also provided the scientific community, both in Chile and abroad, with an important conversation tool and scientific knowledge regarding the habitat of Salares.¹¹⁵ In regard to education, a section of the

¹¹² Riesco, 14.

¹¹³ Fundación Minera Escondida.< www.fme.cl>.

¹¹⁴ Ibid.

¹¹⁵ Ibid.

company's 2002 report is dedicated the Escuela F-89, a primary school in Antofagasta. Due to Fundación Escondida, a modern building of 4,723 square meters was built, school enrollment increased from 320 to 640 pupils, and the time students attended school each day was extended. The school also improved its academic results with respect to others.¹¹⁶ Another initiative supported by Fundación Escondida is the regional literary tournament in Antofagasta, in which 200 writers participate.

Minera Escondida is an example of how an industry does not need have a community directly adjacent to it in order for it to promote development projects. Its incentives are similar to both Anaconda and the current Codelco, signifying that the motives for supporting social development may be similar.

¹¹⁶ Riesco, 15.

Chapter Four/Conclusion: Putting It All Together

Chapter One makes the point that there is not just one way for a company to promote “sustainable development” through corporate social responsibility, partially because of its ambiguous definition. In fact, there is no clearly defined way for a community to promote sustainable development either, as long as the meaning of the concept “achieving human wants or needs” remains in their goals. Development as economic growth continues to top the agendas of these companies, but as the previous chapter discusses, both Codelco and Minera Escondida also engage in activities that promote their own form of community development, or as they call it, sustainable development. This chapter analyzes the concept of sustainable development in the context of the Codelco/Calama relationships and explains the motives for both Codelco and Minera Escondida as they try to promote sustainable development in nearby communities. This study concludes with a discussion for maintaining sustainable development in Antofagasta.

The “Sustainable” Relationship

When mining became the main industry in the Antofagasta Region, and for Chile, in the earlier part of the century, there were not many reasons for social improvement because not much of a society existed. Mining companies that settled in this remote area in the Atacama provided social support to mining camps that were mainly residential areas for miners. Times have changed over many decades, as small mining camps have grown

into larger cities, and the focus on keeping these cities alive has become a priority for both the community and the industry.

In Calama, sustainable development has become a more important issue because of the impact the mining industry has on their living environment, especially in a city located in a region where sources are limited. The challenges that Calama faces today are straining the city, for New Calama, the Calama that includes the new population of Chuquicamata, will expand the city into regions beyond the natural oasis. The story of Chuquicamata serves as a haunting example for most Calameños as health and environmental hazards from the mines threaten the well-being, and even existence, of the Calama community.

As Patricio Valencia from the Municipality of Calama explained, the city continues to lack essential water treatment and health facilities. Even before Calama inherited the population of Chuquicamata, the city struggled with other development issues. In addition to the already existing issues, the Chuquicamata case has prompted the city of Calama to take new measures in development, especially concerning the environment. Calameños agree that the environmental impact that the mine has on the city is crucial and that its effects on the town must be regulated. Calameños also wish for an expansion in social services, since the population of the city is growing rapidly and pre-existing facilities are in need of improvement. To Calama, specifically to the Calameños, sustainable development is mainly development through the improvement in their society.

Codelco, being a business, by nature defines sustainable development differently from the Calameños as they are mostly concerned with economic development. The Buen

Vecino project is mainly known to Calameños as the development of housing that is being built for the former Chuquicamata residents. Buen Vecino also includes other social and environmental development projects, but few seem to address the real development issues that Calama experiences. Some projects in the Buen Vecino plan that Calameños may fully appreciate are health and recreational services, which are yet to be implemented or built. Those projects that have gone into effect almost instantly after the creation of Buen Vecino are structures that the company benefits the most, such as the construction of wider roads that lead to the ports of Antofagasta. Sustainable development to Codelco is defined through their initiatives outlined in Buen Vecino, but the underlying motive for the projects reflects their initiative for the economic growth of their company. Their attempts to work with Calama to form their projects for sustainable development appears as a friendly gesture to the community but is not designed to fulfill all of the community's needs.

With contrasting views of sustainable development, the relationship between Codelco and Calama is defined by their ability to create common goals for achieving sustainable development. The relationship between Codelco and Calama clearly demonstrates the influential presence of the company in community decision-making. As the case study in the previous chapter illustrates, the differences in ideas for sustainable development by residents of Calama and the company are not completely compatible, and many of the solutions that Buen Vecino provides do not solve the immediate concerns of the community. Codelco's reforestation plan for Buen Vecino may not be quite as beneficial to the Calama community as, say, a new potable water treatment plant. It is arguable that the entire idea of Buen Vecino is a strategy by the company to maintain

a respectable image in the community, nation, and most importantly, their investors. The differing conceptions of sustainable development by Calama and Codelco cause problems in actually treating vital community concerns for development.

In order to build a stronger relationship between Calama and Codelco, the two will have to create common goals for achieving sustainable development for both the community and industry. Calama and Codelco are interdependent; and a single-industry town that opposes the local industry would be atrocious for both society and industry. Sustainable development can have a common meaning if the goals of both community and industry are agreed by the two.

Codelco and Minera Escondida: Business as usual

Codelco's Buen Vecino can be viewed as the company's motive for sustainable development through economic growth. This idea is shared by the BHP Billiton company, as Minera Escondida promotes their own projects for sustainable development in the region. Although the two engage in different types of projects for sustainable development, there is no real difference between the motives of the state company and private company as they promote philanthropic activities toward the community.

Sustainable development is no doubt a growing priority for surrounding communities, but the question of whether it is as much a priority for the industry is uncertain. Both Codelco and Minera Escondida produce annual reports that basically say the same thing concerning their focus to promote sustainable development. The state company Codelco used the Buen Vecino program to promote education, health, and environmental initiatives, while the private industry Minera Escondida also promoted educational and environmental causes. Codelco and Minera Escondida would say in their

sustainability report that they are morally aware of the responsibility that they have over their communities, but the overall effectiveness of these programs is still unable to be determined.

It is a challenge to find a recent annual report of any big international company that justifies the firm's existence merely in terms of profit, rather than "service to the community". Such reports often talk proudly of efforts to improve society and safeguard the environment – by restricting greenhouse gases or recycling office stationary, say – before turning hesitantly to other matters, such as profits. Their corporate social responsibility that the companies define for themselves is what contributes their overall notion of sustainable development. Companies nowadays, including Codelco and Minera Escondida, are called upon to be good corporate citizens, and they want to show that they are.

The Future of "Sustainable development" in Antofagasta

The Antofagasta Region is changing rapidly. It is not "a blank spot on the map," but a bustling environment filled with economic opportunities. The population of the Antofagasta Region is growing quickly, as less people are moving out and more people are moving into this region for both work and play. The desert is becoming a home for growing families and new types business beyond the mining industries, such as tourism. As long as the economic opportunity exists for this population, they will remain. The concept of sustainable development lives only if the basis for economic growth persists, as well as the needs for community enhancement – therefore, the concept, struggle, and debate for sustainable development in Antofagasta is not expected to fade in the near future. Although concept of "sustainable development" is viewed differently by various

groups, it is an idea that is widely used as positive and beneficial to all parties. The term “sustainable development” will mostly likely not disappear in the near future for Antofagasta, but evolve into even more meanings that will suit the missions of both industry and community.

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