

**The Mountain's Scar, the People's Wound:
The GasAndes conflict in the Cajon del Maipo River in Central Chile**

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Abstract:

This paper examines the nature of the resolution of the environmental conflict which unfolded with the construction of a natural gas pipeline connecting Argentina and Chile. The conflict was a confrontation between the communities of the Cajon del Maipo in Central Chile, on the one hand, and the industry and government, on the other. It has been considered an "emblematic" conflict by all stakeholders because it put the (then) new environmental legislation in Chile to a severe test. The paper proposes and probes the concept of "environmentally and democratically adaptive conflict resolution" to assess and draw lessons from this conflict. The paper is a part of a wider investigation aimed at identifying democratic and ecologically sound principles and methods for the resolution of environmental conflicts.

Introduction

The site of this conflict is the Cajon del Maipo, the canyon of the Maipo River, south-east of the City of Santiago, in Central Chile. The most direct and visible cause of the conflict was the decision by the Chilean government to build a pipeline to bring natural gas from the Province of Neuquen, in central southern Argentina, to Santiago. The conflict, which began with GasAndes obtaining the concession to build the natural gas pipeline from the Government's National Commission for Energy, unfolded between September 1995 and July 1996.

This case is emblematic because it was the first environmental conflict in Chile to take place within the new environmental legislation, the Ley de Bases Generales sobre el Medio Ambiente (Law No 19,300) or General Basic Environmental Law, intended to prevent or resolve environmental conflicts. A central aspect of the legislation is the System of Environmental Impact Assessment (Sistema de Evaluacion de Impacto Ambiental), which provides, as elsewhere, the concrete process to be followed by any project with potentially significant environmental effects. Moreover, the System of Environmental Impact Assessment (SEIA) was considered to provide the main institutional for the participation of communities affected by such projects. Although the system was not yet formally in place at the time of the conflict (the more specific rules had been defined but still required formal approval), its tenets were clear. In an effort to gain legitimacy for the initiative, the Government required the proponent industry, the Chilean-Canadian Consortium GasAndes, to submit its US \$325 million gas pipeline project to the SEIA. It was, therefore, also the first experience of a formal mechanism for citizen participation in the evaluation of a development project with significant environmental impacts.

After one and a half years of open confrontations between some of the affected communities, on the one hand, and GasAndes and the government, on the other, a negotiated settlement was reached between the company and the communities. Although the final agreement allowed for the formal closure to the conflict, its effects are still being felt. All parties involved have considered the study of this process integral in

identifying key lessons and raising important challenges for the future of the country. The mountains that have the pipeline buried in its heart show now its scars and the communities most deeply affected are still working to heal their wounds.

We do not intend to provide a detailed description of the conflict which has already been widely reported (A. Espinoza & L. Sepulveda, 1996; CIPMA, Septiembre 1996; Paulina Contardo & Carolina Perez, 1998). Instead we will focus on the aftermath of the conflict to assess adaptations towards sustainability and draw lessons which can contribute to the identification of democratic and ecologically sound principles and methods for the resolution of environmental conflicts.

Pragmatic Idealism as Guiding Research Paradigm

Our inquiry is guided by an approach that could be called "*pragmatic idealism*": Pragmatic because it examines the empirical reality of environmental conflict resolution and the practical lessons drawn from this process. And idealism reflecting the value-driven goal of understanding under what conditions it would be possible (if at all) to manage or resolve conflicts in a manner which proactively addresses environmental threats and widely-shared goals of political democracy. Moreover, the empirical reality of widespread conflicts, which are here to stay, is examined from the perspective of what *should* and *could* be done in terms of successful resolution. The tension between reality "*as it is*" and reality as "*it should be*" provides a terrain of inquiry where new possibilities emerge as "*potential realities*."

Applying this approach to the study of a number of environmental conflicts (Rojas, Grandy & Jamieson, 2002, Rojas, Sabatini & Sepulveda, 2002, Altieri, 2002, Aylwin, 2002, Reyes, 2002) has led us to identify eight key attributes which constitute what we call "***environmentally and democratically adaptive conflict resolution or management.***" The principles are:

1. All parties involved have the right and duty to access the most complete information about the pertinent projects, and this information includes the definition of the problem formulated by each stakeholder in the conflict.
2. The accumulated experience of successful conflict negotiation is seriously considered. The process of negotiation is examined from a perspective other than simply one of mobilizing a maximum of power resources. The desirability of creating scenarios and methods of negotiation that allow parties in conflict to achieve some degree of power symmetry to articulate their concerns is emphasized.
3. The flame of a conflict is nurtured by legitimate differences in values and goals: it can burn and destroy, or it can illuminate and fuel social creativity. Conflict resolution which encourages the latter is desirable; ideally, this improves people's well-being.
4. There are provisions to protect the biodiversity of places affected by the projects in conflict. If the biodiversity is already impoverished, these provisions should ensure restoration or remedial action. These provisions should also ensure that the health of the soil, the quality of the water and the native flora and fauna of the place affected by a given project are enhanced rather than diminished.

5. The communities' social capital - their sense of commensality, solidarity, mutual aid and shared knowledge and their network of social support – is protected and enhanced.
6. The ability of proponent industries to create technological and organizational adaptations towards ecological, economic and social long-term sustainability is enhanced with new learning.
7. The capacity of environmental organizations to advocate, negotiate and propose creative solutions is improved.
8. The authority and legitimacy of state democratic organs are reinforced by a perception of maximization of moral authority and minimization of coercive authority. The collective wisdom of all contributes to better management of the next conflict.

We argue that there is enough empirical evidence to suggest that whenever these conditions (constitutive of an **“environmentally sound and democratic conflict resolution or adaptive management”**) are met in the resolution/management of an environmental conflict, the lives of all the human beings involved and the places where they dwell are enriched, respected and considered meaningful. Our research has revealed that environmental “warriors” - that is, people and organizations that have been involved in an environmental conflict - tend to feel more comfortable with the eight principles than those that lack the experience of involvement in environmental conflict. Some of the most explosive environmental conflicts that we have studied have been followed by projects and multi-stakeholder collaborative efforts to draw constructive lessons for future involvement in environmental conflicts (CIPMA, 1996, Morishita & Hoberg, 2001, Joint Solutions, 2001, Gibson, 2001, Magnuson & Shaw, 2003, Sabatini & Sepulveda, 200, 1997,1996

The above principles can obviously be cynically dismissed. This cynical perspective suggests that, similar to other universally established principles (such as those in the UN Charter for Human Rights), principles of environmental respect and democracy will not be implemented because, more often than not, they clash with profit-driven, power-thirsty, ideologically dogmatic, domineering institutions and individuals. But a utopian perspective provides hope that under certain circumstances human beings and their institutions are able to perform acts of human and environmental solidarity. In this research we were guided by the idea that between cynical “pragmatic” surrender to empirical *reality as “it is”* and utopian flights to dreamed *realities as they “should be,”* there is the realm of the potential and the eventually possible which “pragmatic idealism” can uncover and unleash. The potential and eventually possible only emerge if the experiences, voices and interests of all participants, alongside a rigorous assessment of empirical reality, are combined with creative visions of ‘future wanted situations’.

How does the GasAndes-Cajon del Maipo conflict fare in light of such a concept of “environmentally and democratically adaptive conflict resolution or management”? Can we give a report card to a given conflict resolution/management?

Context of the Conflict

In 1990 the Chilean government, through its National Commission of Energy, began to consider bringing natural gas from Argentina. This policy reflected a broader trend in Latin America towards developing gas in connection with electricity. This trend was commonly explained as the result of three factors: the mid-1980s oil-price slump, public demand for cleaner fuels, and the greater liberalisation of the energy industries in many countries. In Latin America, however, an important additional push came from elsewhere: crisis situations bred by the combination of weather upsets that severely curtailed hydroelectric generation and long periods of under-investment in generating capacity.

Natural gas also appeared important due to the grave air pollution problem in the City of Santiago. Santiago ranks as one of the most polluted cities in the world, and its five million inhabitants frequently endure air-quality alerts and pollution emergencies. Air pollution in Santiago is linked to damaging respiratory diseases and a large number of premature deaths. Located in central Chile, the city sits in the middle of a valley and is surrounded by two mountain ranges: the Andes mountains and the Cordillera de la Costa. Because of Santiago's unique geographic location and weather patterns, ventilation and dispersion of air pollutants within the valley are restricted: thus explaining why Santiago, with emission levels similar to those in other cities, suffers from such high atmospheric pollution levels. The pollution problem is further exacerbated in the winter when wind and rainfall levels are at their seasonal lowest. Thus, with a growing population and increased industrial activity, and hence growing demand for energy for both residential and industrial uses, the construction of the gas pipeline was justified by the Chilean government and the proponent industry, the Chilean-Canadian Consortium GasAndes, as an essential step to provide Santiago with a cleaner and cheaper source of energy.

Although there was consensus among the conflict stakeholders about the need to increase the use of natural gas in Chile as an alternative to traditional fossil fuels, several of the communities of the Cajon del Maipo voiced serious concerns about the proposed pipeline corridor. These concerns involved safety and risk assessment questions and a range of possible negative environmental and socio-economic impacts. The latter reflected the importance of the intense community-oriented lifestyle of the valleys' inhabitants and their economic activities: tourism, the main source of income, and small-scale horticultural and fruit production. These concerns were amplified by the fact that the region is prone to winds, landslides caused by melting snow, and periodic significant seismic and volcanic activity.

The affected communities also reacted strongly to what they perceived as a lack of appropriate consultation. The valleys' inhabitants were under the impression that all the key decisions about the project, including a controversial corridor for the pipeline, were already in place, and thus their possibilities to truly influence its outcome very limited.

Thus, the City of Santiago, with its continued population growth and urban sprawl, was the ultimate source of an environmental conflict affecting a dozen mountain communities. Although the conflict affected and involved numerous villages and small towns, this paper focuses on the resolution of the conflict in San Alfonso/ Cascada de Las Animas, where it reached its most explosive and complex levels.

Nurturing The Flame of the Conflict: The Actors and their Positions

As previously mentioned in the key principles of adaptive conflict management/resolution, conflicts are the visible reaction of the sparks created by differing values and goals. Understanding what nurtures the “flame” of the conflict requires an understanding of the different positions held by the various actors. In the case of the conflict in the Cajon del Maipo, the principal actors included the proponent industry GasAndes, the Chilean government, the members of the affected communities (in particular the inhabitants of San Alfonso and Cascada de Las Animas), and the environmental movement. Their positions as the conflict unfolded, and how these positions shaped the resolution of the conflict, provide a basis for assessing signs of environmentally and democratically adaptive conflict resolution/management.

A. GasAndes

Responding to the Chilean government’s interest in finding energy alternatives to reduce air pollution in Santiago, the Canadian, Calgary-based Nova-Corp in association with Chilean partners ENDESA (Empresa Nacional de Electricidad), Chilgener and other smaller partners, created the consortium GasAndes to apply for the concession to build a natural gas pipeline.

In addition to taking advantage of an important business opportunity, the member-companies of the GasAndes consortium claimed to be motivated to improve air quality in Santiago – possibly for self-interested reasons as well as for the public good. The Canadian company wanted to position itself in the growing Latin American market for natural gas and expected this project to initiate other South American contracts. As well, Nova-Corp senior executive J.E. Newall/Newal?, discussed the role of the GasAndes project in alleviating Santiago’s smog. He indicated his desire to persuade the Chilean government to convert Santiago’s fleet of buses, taxis and trucks from diesel to natural gas: “You walk down the street in Santiago, Chile, and you’re just engulfed in exhaust smoke.”

From the point of view of the company, as the GasAndes pipeline ships increasingly higher volumes of gas and electricity is produced by gas-fired plants, the Chilean capital’s air quality should gradually improve over the next decade (Newcomb:1997).

The two Chilean partners in the consortium, two formerly publicly-owned Chilean power industries which were privatized during the military regime of Augusto Pinochet, both have questionable environmental records. We may speculate that negative public exposure as environmental offenders prompted ENDESA and Chilgener to become sensitive to their image and initiate discussions on possible adaptations. This seems to be an emerging trend among companies that are beginning to discover that *“capital markets react positively (increase in firms’ market value) to the announcement of rewards and explicit recognition of superior environmental performance; capital markets react negatively (decrease in firms’ value) to citizens’ complaints”* (Susmita Dasgupta, Benoit Laplante, Nlandu Mamingi: 1998).

Thus, the proponent’s justification of the project of bringing natural gas to Santiago was articulated not only in terms of perceived possible socio-economics benefits but also in

terms of environmental values contributing to public good. This constituted the central element in the industry's public relations discourse.

B. The Government

The Chilean government that intervened in the GasAndes conflict was the third democratically-elected regime since the displacement of the sixteen year long (1973-1989) military dictatorship of Augusto Pinochet. Since 1989, this government has been led by the Concertacion Democratica, a coalition of Christian democrats, social-democrats and other smaller political parties of the centre of the political spectrum. These regimes represented a return to liberal political democracy and dramatic improvements in the situation of human rights. However, they have not significantly departed from the neo-liberal model of development established by Pinochet; they continue to be guided by principles of privatization of key sectors of the economy, radical opening to international markets, specialization and comparative advantage. Furthermore, although Chile has been very successful in terms of traditional econometric indicators, the economic model has been questioned in terms of its environmental impacts and its social and cultural costs (see for example, Altieri&Rojas, 1998, Hunter, 1997; Environmental Mining Council of British Columbia, 1995).

The Environmental Impact Assessment Study approved by the COREMA (Regional Environmental Commission) of the Metropolitan Region of Santiago indicated that the natural gas pipeline was to benefit the country by providing a competitively priced fuel whose usage would decrease atmospheric particle emissions. A study of the GasAndes case by Casa de la Paz (Espinoza&Sepulveda, 1996:31) reported that the project was part of a wider energy program with the goals of: generating electricity; keeping up with the growth rates in both residential and industrial energy use while meeting future emission norms; converting taxis and buses from diesel and gasoline to natural gas (18,00 vehicles by 2007); and expansion of benefits to other regions.

The Chilean government displayed a great political and communicatory effort to gain the public's support, with its emphasis on the environmental and social benefits of natural gas. Nevertheless, its role in creating conditions that contributed to igniting the conflict cannot be overlooked. At the beginning of the conflict, the government's Executive branch appeared excessively committed to support of the proponent industry. In addition, the many government departments – including the National Energy Commission, the Super-Intendencia de Electricidad y Combustibles, the National Commission for the Environment (CONAMA), the Regional Commission for the Environment for the Metropolitan Region (COREMA), the National Forestry Commission (CONAF) - acted erratically and without coordination. This reflected the systemic complexity of the government's institutional arrangements for dealing with environmental matters. The absence of specific policies related to natural gas was also problematic. The creation of these protocols and regulations at the same time as the revision of the Environmental Impact Assessment created public distrust: the government was perceived as rushing to enable the project to be implemented at all costs.

By May 1996, all of the necessary permits to begin the project had been obtained. However, because of the public perception of lack of transparency in the process, the National Commission of the Environment (CONAMA) requested that the executives of GasAndes not make use of their legal right to initiate work in Cascada de Las Animas and San Alfonso. This community was radically opposed to the very notion of having

the pipeline pass through their lands. The discussion between CONAMA and the affected communities proved priceless in the end. It allowed the beginning of informal negotiations about possible alternative corridors circumventing the Cascada Las Animas (which had become a Nature Sanctuary) and the town of San Alfonso.

However, at that time a new proposal suggested that the pipeline route be moved to go through the village of San Alfonso itself. The change would have freed the Cascada Las Animas community of the southern riverside of the Maipo from the pipeline but would have moved it to the northern riverside, where San Alfonso is located. This alternative was flatly rejected by the communities on both sides of the river.

Meanwhile, GasAndes and the various ministers began to put pressure on the communities to begin work on the pipeline. The communities reacted by persuading the President of the Chamber of Deputies (also an MP for the affected ridings of the Cajon del Maipo) to intervene and provide a mediating role.

GasAndes demanded a rapid solution and asserted its legal right to begin work in Cascada de Las Animas despite the resistance of the property owners. This influenced environmentalists in Canada, responding to requests from their counterparts in Chile, to ask NovaCorp to abstain from asking for the use of force against the communities. However, when the communities from both sides of the river decided to block the main road to express their opposition to the proposed corridor and to the contradictory messages from the government, the police intervened violently.

The extreme violence used by the police force even surprised the leadership of the main political parties of the governing coalition. The government expressed some concern about "the possibility of excessive police violence" but insisted that it lacked legal instruments to decide the pipeline route or to order GasAndes to establish another corridor for it (Contardo & Pavez, 1998:34-35).

However, the media coverage of police intervention and the heightening of the conflict significantly influenced the public opinion. Several opinion polls at the time indicated that a clear majority of Chileans supported the right of the communities of the Cajon del Maipo to oppose the established corridor. This in turn prompted the largest two parties of the governing coalition, the Socialist Party and the Christian Democratic Party (the party of the then President Eduardo Frei) to express solidarity with the affected communities. The parties argued that although natural gas would represent a great advance for the country, its arrival should be made compatible with the basic rights of the affected neighborhoods (Contardo & Pave:1998,36). Some right-wing politicians also added their support and this provided momentum to the idea of a negotiation. As the most important political parties of the governing coalition distanced themselves from the project and supported the communities' demand to be properly consulted, some agencies of the government attempted a neutral position, while others acknowledged the communities concerns. The leadership of the Socialist and Christian Democratic parties and even some conservative MPs supported the community, while Socialist and Christian Democratic ministers accused the community of keeping the country hostage' and preventing the benefits of natural gas for all. The Green caucus of both parties and the network of environmental NGOs actively took sides with the resisting community.

The push for negotiation was successful and allowed representatives from the company and the communities of San Alfonso and Cascada Las Animas to reach a settlement,

thereby curtailing the conflict. The presence of the President of the Chamber of Deputies as the mediator in the negotiation, the response of the political parties and their MPs, and the ability of CONAMA to detect, in a timely manner, the possibility of alternative corridors, showed that the political system and its institutions were not impermeable to the expressions of community and citizen interest. However, this resolution was also a result of the real weaknesses of the mechanisms of participation provided by the System of Environmental Impact Assessment, the only formal institutional channel available to question the appropriateness of projects with potentially significant environmental and social impacts.

C. The Community:

How did a project that promised so much public good, that began with the full commitment of the national government, and that proceeded through all the legal steps of the EIA process, end up eliciting so much opposition? And opposition not solely from the communities most directly affected and the environmental movement but from large segments of the general public and from the political ranks of government supporters? To answer these questions we must inquire into the nature of the affected communities and the role of the environmental movement.

There were a dozen villages affected by the corridor of the pipeline, and the inhabitants of the Cajon coordinated their activities through the Consejo Ecologico del Cajon del Maipo (the Ecological Council of the Cajon del Maipo). However, overt resistance took place and was focused in the town of San Alfonso and the Cascada de Las Animas community, and this is the center of our analysis.

The road to the Cajon begins approximately 20 km south-east of Santiago, in the town of Las Viscachas, the location of the city's water works. The road remains a landmark of the old character of the Cajon: this is despite the fact that the road was paved some 30 years ago, that it is used by trucks transporting ore and cement from mining towns of El Volcan, 130 km up in the mountains, and that 10,000 cars and buses bring day tourists from Santiago every weekend.

The Cajon has been called the "lung of Santiago" but it is a lung inhaling increasing amounts of car exhaust and dust. Nevertheless, it remains one of the most popular places to visit outside the city. The attraction is at least in part due to the roadside being dotted with tiny family-owned restaurants with their adobe-ovens, kiosks and roadside stands selling locally produced and home-made foods: empanadas, baked goods, chicha, goat cheese, local fruits and nuts, and all of the typical Chilean foods.

The physical setting of the Cajon is a valley crossed by the turbulent waters of the Maipo River, the site of adventure tourism with rafting, kayaking, mountain climbing and horse-riding, and guided wilderness tours. The old inhabitants of San Alfonso also call the town "Cabeza de Ternera" ("The Calf Head Mountain") in reference to one of the mountains of the Andes chain that form the contour of the town and of the Cajon del Maipo. The metaphor of the calf head reveals the people's understanding of the place: that this place is alive, that the mountains display different faces of animals, people and other beings, that make their presence felt day and night. The waterfalls grow or shrink depending on the weather, but their presence is also always felt; and their presence becomes threatening in times of heavy rains and storms and when the mountain snow melts, causing landslides and floods.

About a one hour drive from Santiago, San Alfonso is a charming town of some 600 inhabitants. The town is characterized by three distinctive yet overlapping community expressions: 1) the community of Cascada de las Animas, mainly the Astorga family which has owned the largest track of land and mountain wilderness around the town for over a century; 2) the owners of small recreational properties, artists and intellectuals that live in San Alfonso and commute to Santiago; and 3) peasant farmers and workers and some owners of small businesses including a couple of small grocery stores, bed and breakfasts and hostels (“residenciales”), and a liquor store.

The first recognized inhabitants of the town (according to official records) are the ancestors of the community that led the resistance against the initially proposed pipeline corridor: the Astorga family. During the 1930s, several of the 10 older Astorga brothers (only two are still alive, and in their 90s, in 2002) were founders of the Socialist Party of Chile, proponents of the agrarian reform, and active participants in the democratic socialist government of Salvador Allende (1970-73) which was overthrown by the coup d’etat led by Augusto Pinochet, on September 11, 1973. Astorgas of all generations have been open and generous, involved in the politics of the country while also deeply engaged in community life.

The children of the Astorgas (now ranging between the ages of 30 and 60 years), a mix of left-wing professionals, legendary adventurers and “flower children” of the 1960s, led the movement protesting the pipeline. Among their ranks were lawyers, self-made or formally trained ecologists, foresters, agronomists, anthropologists, geologists and noted journalists. They were capable of describing every metre of the planned pipeline corridor; technically conversant about seismic and volcanic risks; and able to quickly mobilize a national and international network of media and environmental organizations. The brothers, sisters and cousins and their children could climb these mountains barefoot and blindfolded, recognize every species of flora and fauna, and navigate down the Maipo River in rafts and kayaks. The most visible figure is that of the venerable “Don Eduardo.” At 90 years of age, the gentle and friendly patriarch of the Astorga clan is an accomplished agronomic expert and environmentalist whose opinions still carry significant weight in Chile.

The position of the community evolved during the different stages of the conflict. Initially there was almost unanimous opposition to the idea of a gas pipeline passing by the southern riverside, through the mountain where the 20 or so homes of the people of Cascada de Las Animas, all Astorga family members, are located. This was a testimony to the deep connection that links the Astorga family to the other inhabitants of San Alfonso. Then, as the conflict escalated and the hanging bridge that connects the south and north sides of the river was occupied, and as the roads were blocked in protest, the old feelings of friendship and belonging to the same community were heightened even further. The lines were then clearly delineated: the blocs were perceived as the locals and their friends in the environmental movement, on the one hand, and “them,” the government and the industry and their supporters in the media, on the other.

Some of the communities felt their distinctive lifestyle would be affected and that their properties’ values would decrease significantly. The communities of San Alfonso/Cascada de Las Animas articulated their concerns and demands in terms of the spiritual and sacred attributes of their land, where their ancestors and their extended

families have lived for over a century. For them, their lands were and are priceless. And their chosen lifestyle (back-to-the land, alternative agriculture, wilderness experiencing and advocacy) was to be defended at all costs. San Alfonso/Cascada de Las Animas spoke the language of deep ecology and of First Nations (although they are not ethnically Indigenous groups). They defended the intrinsic value of an area of wilderness and unique ecosystems that became – at the height of the conflict - a Nature Sanctuary.

As the conflict unfolded, the alignments became more complex. Despite the willingness to step up its opposition to GasAndes, the communities of San Alfonso/Cascada de Las Animas finally accepted direct negotiation with the company. The communities were under heavy pressure from a powerful industry impatient to carry out its business within established contractual deadlines. There was also the constant menace of further uses of force, as well as the friendly political pressure of allies who wanted a less confrontational situation to make natural gas a key element in Chile's energy strategy. Thus, the community leaders finally undertook a consultation process and created a delegation for negotiations. The delegation included the Chairman of the Neighbours Association (Junta de Vecinos), a representative from the Cascada Las Animas' Astorga family and a representative of the property owners of San Alfonso.

D. The Environmental Movement

The environmental movement rapidly positioned itself in support of the communities of the Cajon del Maipo in general and those of San Alfonso and Cascada Las Animas in particular. This came as no surprise considering that the unfolding conflict reflected many of the key issues of concern for the environmentalists in Chile: namely the country's energy policy, its model of development open to foreign markets, and the role of the newly established System of Environmental Impact Assessment within the Environmental Law. This was facilitated by close ties: several members of the community in San Alfonso had been involved or were still involved in environmental advocacy in Chile. Some of the most recognized leaders of the environmental movement live in San Alfonso or in the neighboring communities. These leaders included a former candidate for president of Chile on behalf of the Greens, leaders of RENACE (Red Nacional Ecológica or National Ecology Network), the Institute of Political Ecology (IEP), a recipient of the Right Livelihood Award Alternative Nobel Prize, several environmental activists involved in the BioBio conflict in Southern Chile, and producers and directors of various high profile environmental television programs. Besides, there was a natural affinity between the alternative lifestyle of the Cascada de Las Animas's community and many inhabitants of San Alfonso and the Cajon and the values espoused by the green counter-culture.

The environmentalists' network reached fast and deep into the political system through its connections with the Green-oriented factions in the Socialist Party, the Party for Democracy (PPD) and the Christian Democratic Party (PDC), the three main political parties of the governing coalition of Concertación Democrática. They also had strong connections with the media. An international campaign putting pressure on Nova-Corp, the Canadian partner in the GasAndes consortium, along with the active role of environmentalists in Canada, were important factors in persuading the company to initiate direct negotiations.

Besides activities reaching out into the political system, the media, and the greens outside the country, the environmentalists organized the Consejo Ecologico del Cajon del Maipo or Ecology Council of the Cajon del Maipo. This connected environmental activists and supporters in the entire Maipo River canyon. Thus, the inhabitants of the Cajon created an organization to monitor the impacts of all development projects in the region, to advocate for the creation of wilderness preservation areas, to deal with the effects of increasing vehicle traffic in the region and to develop a vision of eco-tourism for the valleys. Members of the Cascada Las Animas' Astorga family were the Council's most recognized leaders. Thus, the environmental organizations in the Cajon contributed to elevating the conflict in San Alfonso to that of a strategic case which would test many of the key questions affecting Chile's environment, its newly created environmental state institutions, and the environmental behavior of foreign investors. Also, this environmental presence provided an unusual sophistication to the articulation of environmentalism in defense of a local community.

The Outcome of the Conflict

Technically speaking, the conflict was resolved by the signing of an Act of Agreement (Contardo & Perez, 1998:254-257) between GasAndes and the representatives of the San Alfonso/Cascada de las Animas communities on June 25, 1996. This was almost two years after the project was publicly announced by J.E. Newal, President of Nova-Corp, on October 7, 1994, in the pages of the Chilean newspaper "El Diario".

This signing was the culmination of a process of negotiation between the two parties, mediated by Jaime Estevez, Socialist Party MP and President of the Chamber of Deputies. The final agreement established that the parties acknowledged the importance of the use of natural gas as a crucial element for the reduction of pollution in the Metropolitan Region of Santiago and for the reduction of energy costs, and that they supported that the construction and operation of the gas pipeline would take place within a year. The agreement accepted the recommendation made by CONAMA to change the original route from the southern to the northern riverside. However, it also included further suggestions so that the pipeline would circumvent the town of San Alfonso and bypass the community of Cascada Las Animas. The agreement also established a number of additional safety conditions. Thus, the community obtained substantial changes in the pipeline corridor plans as well as improved safety and environmental conditions. The latter included preservation of the Cascada Las Animas area which by that time had been designated as a Nature Sanctuary. Moreover the community obtained the right to hire an independent firm (paid by CONAMA and GasAndes) to review the safety and environmental conditions of the new corridor. The agreement also established a US \$1 million fund contributed by the company and monetary compensation was given to all property owners directly affected by the pipeline corridor

Assessment of the Resolution of the Conflict

What can we say about the resolution of this conflict? Was the resolution a satisfactory one from the point of view of democracy and environmental protection? How does the outcome of this conflict stand up in light of our eight key principles of ***“environmentally and democratically adaptive conflict resolution or management”***?

1. *All parties involved have the right and duty to access the most complete information about the pertinent projects, and this information includes the definition of the problem formulated by each stakeholder in the conflict.*

There was a widespread feeling among the community and its allies that information was both incomplete and given late, and that their input into the process would be a cosmetic act, not heard and certainly not acted upon. This has been recognized by the industry, the government, the Environmental NGOs, and the scholars involved in the conflict as one of the key lessons learned from the conflict. Also there is now consensus among the stakeholders about the need to optimize information sharing and to have early consultation with the affected communities.

2. *The accumulated experience of successful conflict negotiation is seriously considered. The process of negotiation is examined from a perspective other than simply one of mobilizing a maximum of power resources. The desirability of creating scenarios and methods of negotiation that allow parties in conflict to achieve some degree of power symmetry to articulate their concerns is emphasized.*

The proponent industry was very slow in recognizing that some type of negotiation was necessary; by this time the conflict had already escalated to levels which were difficult to manage. The industry was confident of the legality of its acts, and felt supported by the government of Chile, including the President himself. Both industry and government were persuaded that acting within the law would be sufficient and that the project would be readily perceived as serving the public good.

Initially, the community also felt that the System of Environmental Impact Assessment would provide the necessary arena to voice all concerns. Meanwhile, most efforts were dedicated to getting organized, obtaining the necessary support nationally and internationally, and optimizing the mobilization of its support network to send the other parties a firm message about its stand.

Thus, negotiation emerged at the end not at the beginning, and its necessity was simply not recognized. In turn, the conflict ended thanks to the negotiated settlement.

Prior to the conflict reaching its peak, there was no institutional design for the scenario of negotiation and no organized support from the part of government to create the conditions for some level playing field among the stakeholders. This problem could be addressed by the community of San Alfonso/Cascada de las Animas with some degree of success due to the access of many of its members to a network of political support. Without the active presence of environmental leaders among the community and without the fluid access to the media and to political representatives, including MPs willing to mediate and facilitate the negotiation, as well as a community prepared to resist, the conflict would probably have been “resolved” by the imposition of the conditions agreed upon between the government and GasAndes.

Clearly, the SEIA did not provide scenarios and methods of negotiation that allowed parties in conflict to achieve some degree of power symmetry to articulate their concerns and have their voices heard. If negotiation took place it was outside the formal channels of the SEIA. This is a serious shortcoming.

- 3. The flame of a conflict is nurtured by legitimate differences in values and goals: it can burn and destroy, or it can illuminate and fuel social creativity. Conflict resolution which encourages the latter is desirable; ideally, this improves people's well-being.*

Again here, the flame of the conflict was nurtured by deep differences in values and interests, and the stakeholders did not perceive their opponents as voicing legitimate positions. The defense of the common good was the chosen discourse of all parties involved but it became a terrain of ideological dispute: Each represented higher values of service to the public. This is not necessarily a mistake of the stakeholders, but rather a serious insufficiency of the democratic process which did not provide for a stable procedure nor clearly define rules for "the game".

During some stages of the conflict the flame was unleashed to "burn and destroy" (e.g. the police's drastic demonstration in San Alfonso perceived as overt police brutality, even denounced by the government as excessive). However, in the end the conflict resolution allowed for the expression of social creativity. Local knowledge proved to be vital, and conditions were created to compensate the community and to change the original corridor of the pipeline while the supply of natural gas for Santiago and neighbouring regions was still assured. Technically, there was also significant social learning. Risk forecast and risk assessment of this technological choice are important on-going challenges.

- 4. There are provisions to protect the biodiversity of places affected by the projects in conflict. If the biodiversity is already impoverished, these provisions should ensure restoration or remedial action. These provisions should also ensure that the health of the soil, the quality of the water and the native flora and fauna of the place affected by a given project are enhanced rather than diminished.*

The existence of an environmental impact assessment system was a new development in comparison with previous environmental conflicts in Chile. GasAndes' environmental assessment study established recognition of the vulnerability of the Cajon's ecosystem, especially in the Nature Sanctuary. However, the communities also contributed important observations through the SEIA process and the negotiation, and thus the final settlement went beyond what had been established by the Environmental Impact study. For example, some of the most vulnerable creeks and landslide-disturbed areas required carefully tailored systems of retention and re-enforcement to prevent potential damage associated with the pipeline. These were finally built as a result of the firm demands presented by the community during the negotiations that settled the conflict. And they were built by the people of the community using locally designed devices with financial support from the industry, a project not in the plans prior to negotiations. Also, a number of reforestation efforts using native and non-invasive exotics were the result of community input. However, industry's commitments to establish watering systems have not been fulfilled and Cascada de Lass Animas is considering possible legal actions (Astorga, 2002, personal communications).

Informants agree that in terms of ecological impacts, the pipeline has not had dramatic effects so far. However, this is the perception from the towns and urban centres. The people that dwell in the high mountains (arrieros and wilderness guides) voice concerns stemming from their perceptions of significant disruptions to wildlife habitat.

In any case, a systematic ecological assessment is in order. The parties responsible for monitoring the outcome of the project (the company and energy authority) have not delivered a trustworthy system and process of monitoring for safety and ecological impacts after the construction of the pipeline. The community's sense that a systematic monitoring for risk assessment is lacking has been revived by the storms and floods of the winter (May-July) of 2002. An appropriate institutional policy should clearly establish this responsibility in some public agency or make provisions to obtain such information in a regular and reliable way.

5. *The communities' social capital - their sense of commensality, solidarity, mutual aid and shared knowledge, and their network of social support – is protected and enhanced.*

This aspect is very difficult to evaluate, although there is general agreement in San Alfonso and Cascada de Las Animas that the community was deeply hurt by the conflict. All informants agree that the community's harmony and stability were disrupted. The conflict heightened the class differences; there is some resentment among the communities as a result of the pipeline being located closer to the town of San Alfonso (although still outside the town's limits) than to the Cascada de Las Animas lands. Although property owners whose land was affected by the corridor were compensated according to an established formula, the process has been a source of some community discomfort.

The one million dollars compensation given to the town of San Alfonso by the industry to support development projects has also been a source of dispute and internal community conflict. Aside from the fund itself, the Foundation created to administer the fund is also a source of new distrust and tension. There are disagreements about the best way to use the funds, although people valued the improvements made to the soccer field and the scholarships given to local youth (children of low-income families) to pursue university studies. Transparency and financial adequacy of decision-making in the Foundation is an issue for some, although it is difficult to assess its significance and the reality of the concerns.

Our fieldwork also revealed some conflicting perceptions about the improvements made to the soccer field. Nobody denies the centrality of soccer to community life and inter-class solidarity, and all town people are proud of the field; but, to preserve it and protect it, the soccer field had to be fenced. This has caused the disruption of access to what used to be the common space, the central social meeting place for all members of the community.

This is a community where, as in all truly alive communities, people gossip a lot. And although victims of gossip are always hurt, gossip is also a form a community expression about what matters to ordinary people. Gossip acts as an informal mechanism of conflict expression and conflict mediation. **Thus, everybody knows what is going on. People are concerned about what others are saying. And informal efforts to revive all friendships and togetherness are ongoing to heal the community.** The old solidarities and sympathies were weakened but not destroyed by the outcome of the conflict. Bitterness will take time to heal, but the locals trust that time will do the healing.

Most community members interviewed during our fieldwork tended to agree that the negotiation was considered successful, despite the lack of institutional regulation and the

threat of police force. The negotiation was successful in obtaining: a) substantial changes in the corridor, moving the pipeline to a more prudent distance from the village; b) additional safety measures; and c) the establishment of an independent commission, paid by CONAMA or the company, providing the community with a trustworthy technical body to review the new corridor and to monitor the construction of the project (see Agreement Act, points 2.1, 2.2 and 2.3 in Contardo & Perez, 1998:54-57).

6. *The ability of proponent industries to create technological and organizational adaptations towards ecological, economic and social long-term sustainability is enhanced with new learning.*

At the end of this investigation we must recognize that the question of what constitutes industry's organizational adaptations towards sustainability remains the most elusive aspect of our research agenda. This is because there is lack of consensus about the meaning of organizational adaptations towards sustainability, a notion understood in many different ways by stakeholders, and because the knowledge base generated so far is rather incipient. For these same reasons industries are very cautious about their views and experiences in probing organizational adaptations towards sustainability. As Gibson et al. (2001) have pointed out in their pioneer work, most work has been done in understanding negative environmental impacts and possible remediation and mitigation activities, rather than in envisioning what constitutes positive steps towards sustainability (potential positive impacts).

We are not aware of the existence of any public document generated by GasAndes, or its former constitutive partners, which provides a general evaluation of the conflict and its outcome. The consortium has changed membership and the actors are either no longer in the country or have moved on with their lives. It would help to know what the industry has learned from this experience. There is some evidence to indicate that GasAndes has concluded that the timely participation of the community is a key component in the process of preventing or resolving conflicts. For example, GasAndes' Managing Director and Chief Engineer Frank Wong declared:

"In the future, and we should have done it from the very beginning, we will spend more time with the communities before applying for a concession. This is what we are doing now with the gas pipeline of the 5th Region. Once we have those conversations, it will be clear what the definite trajectory will be" (Frank Wong, La Tercera, 30 de Junio, 1998).

Other representatives of the industry have echoed this notion. For example, Elena Serrano, GasAndes's Executive Director for Corporate Affairs at the time of the conflict, originally hired as a public relations consultant responsible for lobbying on behalf of the project, declared:

"There was not sufficient attention to the socio-cultural impacts of the project in the terms of reference and this exploded in our face every day. There was too much emphasis on the biological environment and not enough on the people who are the inhabitants of that environment" (G. Espinoza & L. Sepulveda, 1996. Casa de la Paz, page 46).

These statements are certainly very relevant, especially considering that the most widespread themes identified by community members when asked about what

constitutes a good resolution of an environmental conflict were: “that the community be treated with respect by the company and government” and “transparency of information and decision-making and appropriate consultation with the affected community, including its experience and local knowledge.”

7. The capacity of environmental organizations to advocate, negotiate and propose creative solutions is improved.

Let us remember that the GasAndes conflict has been considered “emblematic” by all concerned parties because it was the first one to unfold in the context of the new environmental legislation and the System of Environmental Impact Assessment. The interest in reflecting on the experience and drawing lessons and identifying future challenges led the Centre for Environmental Research and Planning (CIPMA), one of Chile’s pioneer environmental non-governmental organizations, to organize a seminar on the GasAndes conflict. The event was a gathering of representatives of government, parliament, industry, environmentalists and academic researchers. Although their perspectives were different, a number of shared fundamental ideas emerged from the discussion systematized by our co-investigators F. Sabatini and C. Sepulveda (1996):

- The Environmental Impact Assessment System should include the possibility of choosing from various alternatives projects, in terms of their technological choices and location. To make this possible, it is critical for the country to develop a policy of environmental land use and territorial allocation planning.
- Community and citizen participation should take place from the very beginning of the process of environmental impact assessment. This participation should not be restricted to the technical aspects and information sharing, but should also elicit community input in the search for the solution of conflictive aspects (i.e. the pipeline corridor and the nature of environmental mitigation and remediation).
- The System of Environmental Impact Assessment must acknowledge that the decisions to be made during and after the study are political and not purely technical, as it is often assumed.
- The possibility of negotiated settlement of environmental disputes should be included in the public system of environmental management as a routine procedure to prevent or overcome conflicts. Moreover, it should be regarded as an opportunity for democratic development.
- To accept the possibility of negotiated settlement of environmental conflicts implies, by necessity, compensation to the communities for environmental and other costs that the project causes. The doctrine adopted by the Chilean authorities (negotiation only for environmental compensation for environmental costs) is not comprehensive enough: environmental externalities have social, economic and cultural effects, beyond environmental impacts. Moreover, it is very difficult to distinguish among these effects.
- To avoid conflicts, industries should establish, as early as possible, relations of collaboration with local communities affected by their projects. This collaboration is, of course, very different from merely attempting to purchase community silence and consent.
- It is the government’s responsibility to create appropriate conditions for formal negotiations to prevent or resolve conflicts, including the establishment of a balance of power between stakeholders.

8. *The authority and legitimacy of state democratic organs are reinforced by a perception of maximization of moral authority and minimization of coercive authority. The collective wisdom of all contributes to better management of the next conflict.*

A preliminary observation of the unfolding and resolution of the GasAndes conflict would -misleadingly in my view- suggest that the institutions, norms, and regulations of the Chilean state responded effectively to the demands and challenges presented by this conflict. After all, the System of Environmental Impact Assessment did offer a concrete mechanism for citizen and community participation; the communities had a significant input; the National Commission of the Environment did monitor and review the results of the EIA study and, when pertinent, proposed alternative solutions. Other state organs like the National Energy Commission and the Superintendencia de Electricidad y Combustibles (Superintendent of Electricity and Combustibles) did have their say and participated in technical evaluations. When the conflict exploded, the regional MPs got involved and the President of the Chamber of Deputies even became the official mediator. The most important political parties of the governing coalition did support the community and confronted its own government. Congress had a say, the media reported amply.

Although all of the above may suggest responsiveness of the state's institutional mechanisms to deal with this environmental conflict, a review of the conclusions drawn by all stakeholders suggests a more problematic picture. And this picture indicates the desirability of a revision of environmental legislation and improvement in the process of the System of Environmental Impact Assessment (CIPMA 1996).

This is confirmed by the conclusions drawn later on by Vivianne Blanchot, the Director of CONAMA at the time of the conflict, who insisted on the need to understand citizen participation as a bi-directional and broad process that goes beyond sharing technical information about specific projects. Reflecting on the lessons learned from this conflict, she argued for the need for broader mechanisms of consultation. This included a differentiation of "participation" from "negotiation" and need for institutionalized forums permitting the expression of not only local, but also national citizen interest. She further emphasized the need to establish mechanisms to identify valid counterparts to be involved in the dialogue between government and communities. She concluded that the role of the environmental authority must be to act as an arbiter and, at the same time, to protect the environment. In this respect, she noted that not all negotiated settlements are compatible with environmental protection. Negotiated settlements may not be compatible with the preservation of a given environment if the community supports a project with negative environmental impacts (Blanchot, 1996: 25-29).

However, a review of the perception of other actors reveals an even more problematic picture: people in the community still feel bitter about the early support the government lent to the project, before the process of EIA had even been initiated.

Environmentalists charge that the GasAndes case shows an extremely undesirable situation: *the imposition of an investment project by means of police force*, which is unacceptable in a democratic regime. They also highlight the reality that communities often lack technical expertise to react to very complex projects and that there are not institutional mechanisms for them to obtain it. Furthermore, they argue that the conflict revealed the Chilean state's lack of a body responsible for the safety of investment

projects. The services responsible for electricity and fuels, such as the SuperIntendencia de Electricidad y Combustibles, do not have the mandate to review and enforce safety conditions. Until such a body is created, it will be the SEIA and CONAMA (who lacks political clout and legal muscle) which will have to incorporate safety considerations for environmental projects (Larrain, 1996).

There was a perceived inequity between the recipient community and the proponent industry, to the detriment of the communities (Estevez, 1996; Larrain, 1996). However, industry consultants and representatives argue that they are the ones in a position of disadvantage in un-regulated negotiations with communities which have multiple representatives who use a political discourse and knowledge base that prevent the sharing of “valid technical knowledge among valid counterparts” (Katz, 1996).

A final aspect of evaluation of the outcome of the conflict is the irony that the air quality in Santiago, the main justification for the pipeline, remains as dramatic, if not even worse, than at the time of the GasAndes conflict. To be fair, the energy transition plan for the City of Santiago established 2007 as the target for improvement and an assessment of its results will have to await. Meanwhile, a richer debate about the complex causes of air pollution has encouraged environmental organizations to come up with more creative decontamination plans for the City (Larrain, 2000).

Conclusions

The resolution of the environmental conflict in the Cajon del Maipo reveals important directions for social learning and for possible institutional changes to achieve the goal of making environmental conflicts opportunities for democracy. **The scar in the mountain and the wound of the community may provide an opportunity for significant social learning about how to best handle environmental conflicts, which will undoubtedly continue to erupt.**

The study of organizational adaptations following involvement in conflict remains a key aspect in our efforts to visualize an evolutionary cultural transformation towards sustainability. It is not impossible to develop a wide consensus around what constitutes ***Environmentally destructive organisations; Environmentally blind organizations; Environmentally responsive organizations; Environmentally sensitive organizations and organizations that have undertaken an Environmentally successful adaptation.*** We can specify criteria to rank organisational responses within this continuum, which would allow us to create qualitative and quantitative tools for assessing organisational change and adaptation to environmental stress. This ranking is along the lines of Gibson et al.'s (2001) efforts to establish “significance” judgments for sustainability-based environmental assessments. (See Gibson et al. 2001)

It is important to realize that the assessment conducted by the stakeholders in the conflict centered almost exclusively on the “democratic question”: how to improve the mechanisms of participation, how to decentralize decision-making, how to establish a balance of power between the stakeholders, how to use the territory of the country from the point of view of land use planning. Although this makes sense in a country still attempting to remove the heritage of a dictatorship, **very little is said on the “environmental question”: that is, what type of social learning can be realized after this experience to guide organizational adaptations towards environmental,**

social and economic sustainability in industry and government and thereby prevent or reduce the disruptiveness of future conflicts. This, of course, does not diminish the significance of the social learning related to the “democratic question”.

The study of this and other conflicts lends support to appeals for new efforts in building the knowledge base and a new consensus on the desirability of more articulate visions of a sustainable future, beyond the defensive practice of preventing the worse environmental impacts detected by EIA.

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