

# PERCEPTION OF SOCIO-ENVIRONMENTAL CONFLICTS IN MINING AREAS: THE CASE OF THE MIRADOR PROJECT IN ECUADOR

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## Introduction

Large-scale metal mining in Ecuador is unprecedented; however, given the country's mining potential, The Ecuadorian government is firmly committed to support it. Just like with the oil exploration in its day, mining is now promoted as an important source of economic resources for national growth. This approach has been strongly questioned by social organisations that suggest looking for other options that go beyond the appropriation and commercialization of nature.

The socio-environmental conflicts that are associated with large-scale mining represent one of the core issues in the contemporary mining debate, and numerous studies highlight the growing conflicts associated with the huge mega-mining projects, especially in Latin America (MARTÍNEZ ALIER, 2001, GUDYNAS 2009, BEBBINGTON ET AL. 2010). With regard to Ecuador, both the government and the business sector have come up with the option of responsible large-scale mining, which is based on the fact that the mining operations used supposedly lessen the environmental impact. This process has given rise to a considerable polarization in the debate on the benefits of large-scale mining in El Pangui canton through the Mirador Project, and it conditions the population's perception of the different aspects of mining (economic, social and environmental).

The Shuar territory is included in the sphere of influence of the Mirador Project enclave. The Shuar indigenous people are a thousand-year-old ancient ethnic group, who are also known as the Jíbaros (Jivaro people). They traditionally inhabited the upper Amazon region of eastern Ecuador, which is why they are considered to be the legitimate "owners" of this land. The Shuar communities have been affected by this type of conflict since the occupation of the area at the end of the 19<sup>th</sup> century by catholic missionaries,

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colonists devoted to agriculture and livestock, artisanal miners, and even the army during the military conflicts between Ecuador and Peru in the 20<sup>th</sup> century (RADCLIFFE, 1998; RUBENSTEIN, 2005).

The presence of the Shuar in the area and their historical interaction with other population groups significantly conditions the perceptions and the languages of valuation of the actors involved in the socio-environmental conflicts in El Pangui. They have different interests and they advocate different incommensurable values among each other, such as the economic benefits, the development of the region, the sacredness of the land and the indigenous rights. There is a variety of points of view in favour or against mining among all the actors involved: from the local opposition of the different groups supported by the Ecuadorian and foreign environmentalist organisations, to the groups or individuals that have benefited from the arrival of the mining operations, or at least hope to (CHICAIZA, 2010).

In this context, the main objective of this paper is to reveal the perception of the inhabitants of El Pangui in terms of the socio-environmental conflicts that arise in their canton, and more specifically, those related to the Mirador mining project. To this end, firstly the theoretical framework of the study is presented, in which the importance of the perceptions to analyse the environmental conflicts is highlighted. Then the Ecuadorian mining context and in particular that of El Pangui is broached, by analysing different studies carried out on the subject matter. Lastly, the socio-environmental conflicts in El Pangui canton are identified according to the local perceptions, whereby special attention is given to the possible threats arising from the mining operations, to end with the discussion and the conclusion of the paper.

### *Environmental and ecological distribution conflicts*

To get an initial understanding of the environmental conflicts, a quote is used from Santandreu and Gudynas (1998), who define them as being “a particular type of social conflict where the disputed subject matter concerns environmental issues or those related to the quality of life of people”. But when it comes to analysing them, it is worthwhile refining the definition and point out that the resources are limited and distributed unequally, and that there is an imbalance between the costs and benefits. In this way the concepts of “ecological distribution conflicts” and “environmentalism of the poor” are established (GUHA; MARTÍNEZ ALIER, 1997/ MARTÍNEZ ALIER, 2004).

This approach has been supported by different studies that confirm the global nature of the environmentalist concern that would include the new environmentalism of the South; and the complexity of the phenomenon beyond foreseeable and linear relationships, seeing as the development of relationships between society and the environment is highly influenced by the socio-cultural contexts (ADEOLA, 1998, 2000; ACSELRAD, 2004).

Along the same lines, the Brazilian sociologists Alonso and Costa come up with a definition of the socio-ecological conflicts, which includes social and environmental aspects, in which the positions of power and domination are taken into account (ALONSO; COSTA, 2002, p. 58): «when conflicts arise over the control of assets and resources,

pollution or, in a more global sense, the power to produce or impose certain definitions of reality». Accordingly, the existing socio-environmental conflicts involve much more than mere fights over the ownership of a resource. They include opposing life and environmental worldviews, normally under a context or logic of domination.

From this point of view, when analysing environmental conflicts, it is essential to distinguish between environmental problems and the possible conflicts that these entail. Obviously, the environmental problems could be factors that trigger off many social conflicts, although they themselves do not represent a conflict. That is to say, if a conflict is going to be caused by a certain problem, social viewpoints and dynamics always come into play (ORTIZ-T et al, 2011). As suggested by Homer-Dixon (1999), the environmental changes (generally negative) can give rise to conflicts only if they are accompanied by other causes related to social issues. The likelihood of environmental problems turning into conflicts depends on different processes that take place in the in-between stages, in which multicausal dynamics are established, and these are conditioned by “threshold effects” and “chaotic behaviour” (HOMER-DIXON, 1999, p. 3).

In any case, this author makes it clear that there isn't a direct and linear link between environmental factors and conflicts; instead they are conditioned by social, institutional factors, the resource consumption relationship between the population and the environment and, on another level, by the characteristics of the ecosystem itself. Therefore, it would be these social effects that would trigger off the conflicts, and the direct environmental causes would move onto a secondary level of causality.

### *The importance of the perception in the analysis of the environmental conflicts*

The “Human Needs Approach” has proven to be useful as analytical framework of the conflicts, because it gives priority to studying the sources of the conflict and the roots of the problems so that violence can then be avoided or prevented. Different authors who have worked on this research field have stressed the importance of the perception of the conflicts, especially Marshall Rosenberg and Manfred Max-Neef. They think that the perception of the possible conflicts is made up of culture, education and social influences, and it has a key role in determining the priorities and the incompatibilities among the unsatisfied needs in a conflict, which can result in violence.

Within this field, the components of perception have been widely studied, especially in interpersonal conflict processes that escalate into violence (ROSENBERG, 2003; FISCHER, 2011; WINSTOK, 2007). However it is worth pointing out that there are also a growing number of researchers who stress the importance of the perceptions in socio-environmental conflicts. This process is related to the evidence that is becoming increasingly more palpable about the complexity of the environmental problems and the resulting conflicts. This has prompted the search for new methodological approaches to manage these conflicts, which centre on “the importance of the subjective perceptions and the socially constructed reality” (PAHL-WOSTL, 2007, p. 561).

Indeed, in the last few years different studies have pinpointed the conflictive relationships that can arise when implementing nature conservation policies as opposed

to the perceptions, expectations and the attitudes of the local communities, revealing mistakes when it comes to understanding social relationships and policies of these communities and even their own worldviews (FRAGA, 2006; OLTREMARIA; JACKSON, 2006; LIU et al. 2010). These conflicts are linked to a dispute about different belief systems and the perceptions of the local actors in the form of the so-called languages of valuation (MARTINEZ-ALIER, 2001). That is to say, the conflicts are not just caused by discrepancies within a system of homogenous interpretation, but rather that “there are cultural perceptions that are expressed in different languages of valuation (aesthetic, moral, environmental, economic, social, cultural, etc.), which cannot be compared on the same scale of values” (WALTER, 2008, p. 18).

Different authors point out that analysing conflict in terms of languages of valuation helps to include the different aspects of the conflict and distinguish between the disputes that can be resolved with technical measures or financial rewards and those that cannot be solved like this. As well as the material conditions, the results imply that the values and the perceptions have a fundamental role in the conflict, and the technical or monetary compensation schemes are not enough to solve it (AVCI et al. 2010; MUNDA, 2008). Accordingly, in a conflict caused by large-scale mining within an intercultural context like the one in question, normally the company bases its arguments on the economic gains for the region, while the opposition bases its case on the health risks and/or the violation of the indigenous rights in the area pursuant to the ILO-Convention 169 (RODRÍGUEZ, 2011).

Moreover it has to be pointed out that the concerns of the local actors are often related to the communities’ attachment to their immediate geographical surroundings, which is also defined as “place-identity”. This is a variable that must be discussed when analysing socio-environmental conflicts and what the communities think about them (WESTER-HERBE, 2004). In terms of environmental psychology, different studies have suggested that the “place-identity” is essential to shape a person’s identity, and therefore their system of values and requirements (PROSHANSKY et al., 1983; KORPELA, 1989; DIXON; DURRHEIM, 2000).

The conditions that determine the place-identity are also closely related to the traditional ways of life and subsistence, especially in rural areas. That being the case, shaping “popular environmentalist” identities as stated by Martínez Alier (2004), is especially relevant when structuring and supporting the local resistance against the large-scale mining projects, which could come together in areas that have a great wealth of natural and cultural resources, including the ancestral land of indigenous communities like the one in question.

Prior historic experience in similar conflicts is very important when it comes to this matter. In the case of conflicts caused by mining operations the extensive well-documented tradition of impacts on the health and the environment of the affected<sup>1</sup> communities condition the negative perceptions of one part of the population, as discussed hereinafter for the case in question: the Mirador project in the canton of El Pangui, Ecuador.

## Methodology

The research process started off by collecting data in El Pangui through secondary academic sources and also through institutional reports and publications in the press. After that, primary information was obtained using qualitative techniques in order to find out first-hand about the perceptions of population from the canton. Before carrying out the fieldwork, meetings were held with focus groups of each parish, to build up mutual trust and raise awareness. After getting in touch with the key actors, information was obtained by organising in-depth interviews. Using the interviews as a methodological tool enhanced the interaction with the interviewees, which therefore favoured the descriptive understanding of the perceptions and the experiences of the community and by doing so a more accurate idea of the different arguments could be obtained.

The selection process of the interviewees was split up into two parts: choosing a general sample of the population of the community to obtain general information about what they think about the conflicts; and identify those with polarized opinions about mining to obtain information about the conflict associated with mining.

For the first part of the selection process a proportionate stratified random sampling technique was used in the database of the INEC (The National Institute of Statistics and Census) in 2010<sup>ii</sup>, to obtain the sample of people to be interviewed. This included the following variables: age, education, ethnic group, gender, nationality and occupation. The second part focused on the individuals who already had a polarized opinion of the mining, that is to say, those who were highly in favour or completely against it, and in this way the reasons or the grounds that prompted them to have this opinion could be examined.

The fieldwork stage was carried out in each of the three parishes and the capital. First the work was done in the rural area, then in the Shuar communities and it ended in the urban area. The same methodology was used in each one of them. The evaluation of the perception of the conflict is based on the narrative and sequential analysis of Fritz Schütze pursuant to the review by Jovchelovitch and Bauer (2000). To this end the information was coded for each interview and the main variables were established; and these variables and the relationships between them were compared. The study was developed in line with the different social actors and the data collection was rounded off by participant observation, to get a clearer idea of the different perceptions concerning the socio-environmental conflicts.

## The context: mining in Latin America and Ecuador

The mining conflicts in Latin America and more specifically in the Andean region have been a widely discussed and well-documented subject matter in the last few years (BEBBINGTON et al., 2010; BEBBINGTON, 2009; GUDYNAS, 2009; URKIDI, 2008; WALTER, 2008). Since the 1980s, different regulatory reforms to cash in on the investment in the region's sector have favoured the growth in promoting mining operations (URKIDI, 2008, MORGAN, 2002).

The world Bank was behind these reforms, that were made mostly in Chile, Mexico, Argentina, Peru, Brazil and Venezuela, and as a result of these the mining sector in this region grew more than any other emerging market had in the previous 10 years (WALTER, 2008, p. 19). Nevertheless, the case of Ecuador is in a certain way special within the region due to the fact that it was late to be included in this dynamic. And it is precisely for that very reason that Ecuador is a benchmark country when it comes to studying mining conflicts nowadays, due to the political process of different legal reforms concerning mining, which gave rise to the new law approved in July 2013.

Indeed, the country has changed considerably since the new Constitution of the Republic of Ecuador in 2008. These changes include recognising the rights for nature, which initially involved a series of legal presuppositions, although it is also related to the expectations and the perceptions of the local population. Undoubtedly, the recent approval of the new Mining Law has produced different opinions among the locals as well as on a national level, both for the government and for the communities, environmental and pro-mining organisations, and the civil society in general.

This legal and regulatory framework is of utmost importance in terms of the guarantees to respect nature and the potential conflict of interests with large-scale mining projects. This controversy has given rise to numerous debates in the country and it continues to be one of the main arguments of the indigenous and environmentalist groups. It is precisely the heterogeneous movements that are against the mining which are really interesting; where rural and urban profiles with significant political and ethnic diversity are combined (VELÁSQUEZ, 2012).

Recent scientific literature has described the different aspects of the environmental conflicts related to mining in the specific Ecuadorian context in great detail. The environmental impact of the projects, mainly of the water resources, has been taken into account (VELÁSQUEZ, 2012; ACOSTA; MARTINEZ, 2010); along with other issues concerning the confrontation of activist, political and scientific discourse in mining conflicts (BUCHANAN, 2012).

In this context the President of the Republic of Ecuador signed the agreement for the open-pit copper mine in the parish of Tundayme of the canton El Pangui on the 5<sup>th</sup> of March, 2012 with the company Ecuacorriente (ECSA, S.A.), which was originally a Canadian company that is currently owned by the Chinese companies *Tongling Non-Ferrous Metals and China Railway Construction Corporation*. It became the first large-scale mining project in the country, a fact that created a great deal of uncertainty among many of the inhabitants of the whole canton of El Pangui, and in the rest of Ecuador.

The conflict that arose in El Pangui as a result of the Mirador Project starting pinpoints the aforesaid characteristics to perfection. The case has been covered by scientific literature through the work of Ximena Warnaars (2010, 2012a, 2012b), and in a few other specific studies on the impact that the project has had on Human Rights (CEDUH et al., 2010).

It is important to point out that the area where the Mirador Project is located is known for its wealth of biodiversity, which includes protected areas that are part of the Cordillera del Cóndor (Condor mountain range). This has produced intense debate about



the development of the large-scale mining operations here. The exceptional biodiversity in the Cordillera del Cóndor has been highlighted in studies carried out by Conservation International and the Missouri Botanical Garden (MBG), and although all the studies carried out underline the scientific interest in the area, they also stress that the assessments made so far are incomplete (CHICAIZA, 2010). Furthermore, and as emphasized in the introduction, both in the Cordillera del Cóndor and in other places in the canton there are different Shuar communities and the implications of such must be taken into account when analysing certain conflicts caused by the relationship between man and nature.

## Results

### *Perception of the socio-environmental conflicts in El Pangui*

During the six months of fieldwork in the canton el Pangui, interviews were held in the three parishes of the canton: Pachicutza, El Guismi, and Tundayme; and in the municipality of El Pangui, the capital. When obtaining information in each of the parishes of the canton about the population's perception of the socio-environmental conflicts, interesting results were obtained on the social and environmental quality in general, along with data on the expected threats of starting the mining operations of the Mirador Project. In line with the information acquired, it is clear that a considerable number of the inhabitants of El Pangui did perceive conflict concerning different social and environmental aspects during the data collection and also that they do have expectations with regard to the mining project starting.

On a social level, the dangers resulting from the arrival of mining in the stages before operations actually start are clearly the main causes of the population division observed in each one of the parishes of El Pangui canton. Another related factor that is common to the three parishes and the capital is the migration. This migratory process that is related to the initial stages of the mining project is also perceived as a factor that generates other threats.

The inhabitants of all the parishes see the migration of people from outside to El Pangui canton as a doorway to the increase in crime, alcoholism, drug addiction and bars or brothels that could be the centre of conflict. Moreover, other possible factors were also highlighted such as the unemployment among the locals in contrast to foreigners who were being hired; the increased incidence of different diseases; a greater division of the local social groups due to an increase in inequality; and a possible rise in the number of violent crimes such as robberies and murders. These perceptions are related to the previous experiences of mining in the south of Ecuador, especially the artisanal gold mining operations of Nambija and Chinapintza, in the same province of Zamora Chinchipe (SÁNCHEZ-VÁZQUEZ ET AL., 2016), which also coincide with other issues pertaining to the overall anti-mining image (MARTÍNEZ-ALIER, 2001).

**Table 1. Existing socio-environmental conflicts vs. Expected mining-related threats.**  
**Source: Compiled by authors.**

PLACE	CURRENT SOURCES OF CONFLICT		EXPECTED THREATS CAUSED BY MINING	
	SOCIAL	ENVIRONMENTAL	SOCIAL	ENVIRONMENTAL
Pachicutza	<ul style="list-style-type: none"> <li>- Political factors as the cause of population division.</li> <li>-Mining as the cause of population division.</li> <li>-Migration</li> <li>-Lack of coordination of the Parish Council with the Pangui Municipality</li> </ul>	<ul style="list-style-type: none"> <li>-Contaminated water due to the lack of refuse collection</li> <li>-Burning inorganic waste</li> <li>-Livestock free on the mountains</li> <li>-Tree felling</li> </ul>	<ul style="list-style-type: none"> <li>-Crime</li> <li>-More bars</li> <li>-Brothels</li> <li>-Alcoholism</li> <li>-Drug addiction</li> <li>-Migration of people to the capital</li> <li>-Unemployment in the parish</li> <li>-Diseases</li> </ul>	<ul style="list-style-type: none"> <li>-Polluted water</li> <li>-Infectious diseases for animals</li> <li>-They contaminate resources: air, soil, plants, wildlife.</li> <li>-The land is not going to be suitable for agriculture.</li> </ul>
Guismi	<ul style="list-style-type: none"> <li>- Mining as the cause of population division.</li> <li>- Domestic violence</li> <li>-Migration</li> <li>-Land title in Shuar community.</li> <li>-Alcoholism (young people)</li> <li>-Lack of socialization about the Land Use Planning</li> <li>-Theft</li> </ul>	<ul style="list-style-type: none"> <li>-Contaminated water due to the lack of refuse collection</li> <li>-Burning inorganic waste</li> <li>-Tree felling</li> </ul>	<ul style="list-style-type: none"> <li>-Crime</li> <li>-Population division</li> <li>-Tension between couples</li> <li>-Theft</li> <li>-Rape</li> <li>-Violent deaths</li> <li>-Prostitution</li> <li>-Diseases</li> <li>-Increase in traffic</li> <li>-Higher prices</li> </ul>	<ul style="list-style-type: none"> <li>-Contamination.</li> <li>-Depletion of natural water sources.</li> </ul>
Tundayme	<ul style="list-style-type: none"> <li>-Mining: cause of population division</li> <li>-Migration</li> <li>-Dependency on mining</li> <li>- Social Organization</li> <li>- Land title in Shuar community</li> <li>-Company buying up the land</li> <li>-Relocation</li> </ul>	<ul style="list-style-type: none"> <li>-Contaminated water due to the lack of refuse collection</li> <li>-Burning inorganic waste</li> <li>-Contamination from sewage released into the Quimi River</li> </ul>	<ul style="list-style-type: none"> <li>-Discos</li> <li>-Crime</li> <li>-Corruption</li> <li>-Rape</li> <li>-The company building the new bridge.</li> <li>-Diseases</li> </ul>	<ul style="list-style-type: none"> <li>- They contaminate resources: water, soil.</li> <li>-Drop in agricultural production</li> <li>-Livestock affected</li> <li>-Depletion of natural water sources</li> <li>-Forests disappearing</li> </ul>
Pangui	<ul style="list-style-type: none"> <li>- Mining as the cause of population division.</li> <li>-Alcoholism among young people</li> <li>-Drug addiction to contact cement</li> <li>-Teenage pregnancies</li> <li>-Migration</li> <li>-Theft</li> <li>- Domestic violence</li> <li>-Lack of transport services in rural districts and the Shuar community</li> </ul>	<ul style="list-style-type: none"> <li>- Contaminated water due to the lack of refuse collection</li> <li>-Burning inorganic waste</li> </ul>	<ul style="list-style-type: none"> <li>-Crime</li> <li>-Migration</li> <li>-Killings</li> <li>-Discrimination</li> <li>-Epidemics</li> <li>-Diseases</li> <li>-Violence</li> <li>-More social division</li> <li>-Murders</li> <li>-Discos</li> <li>-Prostitution</li> <li>- Appropriation of land</li> <li>-Dependency on mining</li> </ul>	<ul style="list-style-type: none"> <li>-Contaminated resources: water, air, soil</li> <li>-Desertification</li> <li>-Infectious disease for the livestock</li> <li>-Destruction of the forests</li> </ul>



As shown in the summary table, in the parish of Tundayme certain specific concerns were identified, which are related to the fact that this is where the mine is located and therefore it is directly affected by the mining process, in a more accentuated way than the other parishes. This means that conflicts such as the buying up of land by the company ECSA, S.A. or the relocation of those affected when carrying out the study stand out. It is also striking that the opening of a new bridge so that the heavy machinery could go through and the parish could be connected up with the rest of the canton was included among the expected problems associated with the mining operations stage.

Another situation to be pointed out among the social concerns is the form of ownership of the land of the Shuar communities, namely through the community land title. This fact highlights the clash of ideas and the incompatibility of the languages of valuation of the company and these communities, when purchasing the land and offering to relocate those affected. Even if they had wanted to sell their land to the company in return for financial compensation, as was the case for some of them, the Shuar inhabitants were prevented from doing so by indigenous law that was based on their worldview and their attachment to the land. It must be pointed out that the conflicts faced by the Shuar with regard to the ownership and the use of the land are in turn closely associated with the fracture in a group's identity, where the natural surroundings is much more than just an economic resource. In this respect, it is a good idea to use the concept of "cosmographies", defined by Paul Little as being "the collective, historically contingent identities, ideologies, and environmental knowledge systems developed by a social group to establish and maintain human territory. The cosmographies encompass the symbolic and affective relationship that a group maintains with its biophysical environment, which creates bonds of identity between a social group and a geographical area" (2001:5).

Of course, when it comes to the Shuar cosmography, enhancing their worldview and exercising their collective indigenous rights is a complex matter that does not come about without contradictions, not only in terms of handing over the land but also in relation to the elements that are analysed hereinafter. In this respect, the forms of resistance and valuations were not homogenous in the Shuar communities, although the fact that having community land titles was a source of conflict for some of them, whether they were in favour of selling and the relocation or not.

As for the environmental aspect, there were other conflicts obviously perceived by the local population that had nothing to do with the mining operations, as they had existed for quite some time or arose regardless of the arrival of the mining project. Among these they mainly talk about the rubbish tips; the burning of inorganic waste; and contaminated water due to the lack of refuse collection services. This situation is common to the three parishes and the capital, specifically in the rural areas and the Shuar communities.

Furthermore, the towns of El Pangui canton are in a heightened state of alert in terms of the possible environmental threats that could be produced by the mining operations. In their three parishes together with the capital, there is a clear consensus when emphasizing the potential threat of the contamination of natural resources, both in terms of the water sources, the air and the soil, together with the destruction and the degradation of the surrounding forests. In addition to that, they also stress the possibility of new illnesses or infectious diseases affecting the livestock as another relevant source of conflict.

### *The fears concerning the start of the mining operations*

In the last few years the mining operations have become, due to various aforesaid reasons, the biggest fear or concern for the locals of El Pangui. However one point that many of the inhabitants mentioned when asked what was the main reason for the conflicts, was the lack of information. When the study was being carried out the majority of the inhabitants did not know what the mining company ECSA S.A did in the different stages of the operation, even though it was already in the stage of building the camp and putting up other infrastructures, which exacerbated their feelings of fear and concern.

The people from El Pangui canton never felt as though they had enough information, about the project or the informative socialization processes provided by the company, mainly supplied through the spaces for socialization and participation of the company's Environmental Impact Assessment and the Corporate Social Responsibility policies. In fact, these spaces did not help generate trust; instead they increased the doubts and the reserve of the population (WARNAARS, 2012b). This factor was crucial when shaping the perception of the conflicts associated with the mining, and the fear or concern produced among the population.

The main fears of the population were assessed according to the start of the mining operations stage of the Mirador Project. The fears that caused the most concern among the population of El Pangui canton were analysed during the data collection along with the reasons why they actually came to terms with them.

**Table 2: The population's fears related to mining. Source: Compiled by authors.**

PLACE	REASONS		CAUSE OF THE FEAR
	SOCIAL	ENVIRONMENTAL	
Pachicutza	<ul style="list-style-type: none"> <li>-Instability such as in Nambija and Zaruma</li> <li>-Increase in crime</li> <li>-Places of leisure</li> </ul>	<ul style="list-style-type: none"> <li>-Continued contamination of the parish and the canton</li> <li>-Sown fields affected</li> </ul>	MINING OPERATION
Guismi	<ul style="list-style-type: none"> <li>-Incidence of the social impact on future generations</li> </ul>	<ul style="list-style-type: none"> <li>-Air pollution</li> <li>-Water shortage</li> <li>-Death of animals</li> <li>-Lack of forest protection</li> </ul>	
Tundayme	<ul style="list-style-type: none"> <li>-Violence between those for and against mining</li> <li>-The company does not hire the locals from the area who are directly affected by the mining operations</li> <li>- Fear of being relocated</li> </ul>	<ul style="list-style-type: none"> <li>-Contamination of resources such as water, soil.</li> <li>- Livestock affected</li> <li>-Impact for future generations</li> </ul>	
Pangui	<ul style="list-style-type: none"> <li>-Impact for future generations</li> <li>-Crime</li> <li>-Alcoholism</li> <li>-Diseases</li> <li>-Mining companies</li> </ul>	<ul style="list-style-type: none"> <li>-Contamination of different resources</li> <li>-Diseases in animals</li> <li>-Impact for future generations</li> </ul>	

Among the possible threats observed by the population that could be caused by the

copper mining were those associated with no longer having the appropriate conditions in their surroundings due to the social and environmental impact that could be produced in this process.

The parish of Tundayme, located in the direct zone of influence of the mining operations, is for obvious reasons where the inhabitants feel the most vulnerable. It is in this parish where the most accentuated conflicts of the whole canton have arisen among the locals who have different viewpoints on the mining, for and against. These conflicts have triggered off violent reactions on both sides. In turn these have created fear among the population and this means that the violent resolution of the conflicts is underlined as being the main concern of the parish.

Another big fear of the population in Tundayme is that they are going to lose their properties and be relocated. The mining company ECSA, S. A. is still immersed in a land acquisition process and it is negotiating with the inhabitants of the area to relocate them in parishes nearby and even in the capital. There were different levels of opposition among the population of the parish to being part of this relocation plan, which is still one of the fiercest conflicts in the canton (WARNAARS, 2012). Especially among the inhabitants of the San Marcos district, where there have been violent episodes of anti-mining resistance, and now it is practically empty.

Not only the inhabitants of this parish, but also others belonging to the capital (both from the rural and urban area), were especially concerned about the impact that the Mirador Project mining operations was having on society and the environment and that it could affect future generations. This argument was emphasized especially by inhabitants that have strong work-related connections with their territory (farmers or cattle raisers); cultural ties (the Shuar people); along with moral beliefs and ideas about nature.

### *Polarization between pro and anti-mining*

The reasons or arguments of those who had a polarized opinion about the mining in the canton, varied significantly according to how much importance was given to the economic, social or environmental arguments. However these positions were also influenced by cultural, “cosmographic” issues or place attachment, as shown below.

The individuals in favour of the mining expected that the mining company would comply with its obligations related to social issues, those concerning the working conditions and the environment. However the main priority for them was the socio-economic benefits for El Pangui canton. This is a pattern that is often repeated when analysing social-environmental conflicts of the large-scale mining projects: the sharing out of the economic benefits as a key factor in causing conflict and how they evolve (ARELLANO-YANGUAS, 2012).

Table 3. Arguments in favour and against mining. Source: Compiled by the authors.

SUMMARY TABLE OF THE ARGUMENTS ABOUT MINING	
POSITION	Aspects and Arguments
IN FAVOUR	<p><b>Economic Aspect:</b></p> <ul style="list-style-type: none"> <li>-Creating jobs for the inhabitants of El Pangui canton.</li> <li>-Source of income through the royalties for the canton and an increase in the budgets to carry out projects in the interests of the canton.</li> <li>-Increase the wages of the workers of the mining company in the mining operations stage.</li> </ul> <p><b>Social Aspect:</b></p> <ul style="list-style-type: none"> <li>-Social benefits produced by relatives working in the mining company ECSA S.A</li> <li>-Support from the mining company ECSA S.A for different activities</li> <li>-On-going training for workers of the company on a national and international level.</li> <li>-Socioeconomic development as a way to get migrants to go back to the canton where they came from.</li> </ul> <p><b>Environmental Aspect:</b></p> <ul style="list-style-type: none"> <li>- Responsible mining.</li> <li>- With high technology they are going to lessen any possible impact on the environment.</li> </ul>
AGAINST	<p><b>Social Aspect:</b></p> <ul style="list-style-type: none"> <li>-Makes the inhabitants dependant on the company with the minimum wages.</li> <li>-Influence on young people to work in the mining company.</li> <li>-Pressure on the inhabitants from the mining company to sell their land.</li> <li>-Qualified jobs in the company for external people who are not from the canton due to the lack of qualified local inhabitants.</li> <li>-Mining as a cause of population division.</li> </ul> <p><b>Economic Aspect:</b></p> <ul style="list-style-type: none"> <li>-Lack of job sources and low wages due to a lack of qualified workers.</li> <li>-Income does not go back directly into the canton.</li> <li>-Economic aspect will only benefit the pro-miners.</li> </ul> <p><b>Political Aspect:</b></p> <ul style="list-style-type: none"> <li>-The company has a lot of influence when it comes to electing the political authorities.</li> <li>-Distrust in the Administrators of Justice due to pressure from the company.</li> </ul> <p><b>Environmental Aspect:</b></p> <ul style="list-style-type: none"> <li>-Destruction of natural resources such as the plants, animals and forests.</li> <li>-Contamination of the air, water and soil.</li> <li>-Impact for future generations.</li> </ul>

In this analysis of the pro-mining ideas, the point of view of the conflict that is provided directly by the company ECSA S.A. is very enlightening. One of its representatives<sup>iii</sup> stated that they were going to support the sectors that were directly affected: that the project had been socialized, and that there was information available for that purpose (in contrast to the general perception of the population, as aforementioned). It was also revealed that they were aware of the fact that the mining operation was not welcome in certain districts, and this was its argument to justify why it had not been able to organise meetings with the community and discuss the mining project in more detail with the locals.

According to this representative, it is true that the company did train its employees, and she drew particular attention to the fact that a community training project “Copper School”, a training and educational centre for the inhabitants of El Pangui canton was being planned for the future. This argument is used by the company against the claims of the anti-mining sector that points out that there still are not any locals who are specialised in the field of extractive metallurgy engineering, therefore the jobs available in the mine

company were not going to be offered to the inhabitants of the canton, who would only be eligible to be employed as unskilled workers.

Finally, the company stressed that the camp was open for anyone who wanted to come in and find out more about its work, and that it had a community support plan, with different projects adapted to the different sectors of the population: children, young people, women, adults, seniors.

However, those who were part of the opposition had a completely different outlook. They all stated that there had been no consensus about the project since the mining company ECSA S.A had been taken over by the Canadians, approximately 11 years before this study was conducted. This sector argues that there has been a continual fight, and that they took this stance as soon as they found out about the mineral mining operation in the canton, and their environmental and social concerns were the main reasons why the locals defended their territory.

The anti-mining resistance in the canton has obviously evolved during the afore-said period. Initially, various Shuar and other organisations from the civil society of El Pangui took part in a multipartial process of resistance that included the parish councils and peasant organizations, and it had the support of NGOs such as Care and Arco Iris. Different workshops and forums were organised, and in the municipality of El Pangui the Comité en Defensa de la Salud, la Naturaleza y de la Vida (Committee for the Defence of Health, Nature and Life) was set up in opposition to ECSA for “interfering with their ways of life” (LATORRE, 2012). This Committee led the anti-mining fight in the canton until the outbreaks of violence recorded in 2006, which was like a turning point that resulted in the loss of progressive participation of some of the resistance leaders due to different circumstances, such as depletion or the criminalization of the protest (WARNAARS, 2012). After a reorganisation break, the fight has been led by Cascomi (Comunidad Amazónica de Acción Social Cordillera del Cóndor Mirador, namely, the Amazon Community for Social Action Cordillera del Condor Mirador), a group made up of mestizo peasants and the Shuar people who have focused their claims on the territorial conflicts and advocating the collective rights of the communities that have been affected.

Accordingly the resistance process has been related to the Shuar indigenous cosmography through new expressions of the ‘popular environmentalism’ and the ‘environmentalism of the poor’ (MARTÍNEZ-ALIER, 2004). The principles of *indigenismo* and the collective rights on the ancestral land, land titles and prior consultation, are important elements that determine the way that the resistance and negotiation is adopted in the Mirador Project context. We think that these are political projects that are added on to the creation of different development models and ideas about the human-nature relationship, which in turn include the notion of essence of *Sumak Kawsay* as part of the Constitution of the Republic of Ecuador.

Although it is true that, as aforementioned, the positions within the Shuar communities cannot be considered to be homogenous. For example, various Shuar representatives were in favour of the mining and they mainly based their position on economic arguments. Even the Shuar Federation of Zamora Chinchipe (FESZCH) took a pro-mining stance, actively taking part in the violent outbreaks of 2006.

Nevertheless, in some of these Shuar communities the specific nature of their worldview was revealed in terms of the man-nature relationship and the possible threats for future generations, thus enhancing the aforesaid “Shuar cosmography”. But this evaluation of the environmental quality as an asset that cannot be replaced or compensated for economically is not limited to the indigenous communities. Indeed it was used as an argument by other inhabitants too who expressed their attachment to their native soil where they had lived all their lives, thus showing a strong sense of “place-identity”, and they expressed their fears that their traditional lives were being threatened, thus establishing their position as popular environmentalists.

This idea clearly clashed with the evaluations of the pro-mining inhabitants, who not only gave priority to the financial rewards and the opportunities to develop the region, but also in terms of the environment, where they stated that they trusted in the techniques used to reduce the environmental impact and so-called “responsible mining” to carry out operations that were not excessively harmful for the environment or the inhabitants. As it can be seen, the population of El Pangui canton is a clear example of the “clashes of valuations”, which go hand in hand with the large-scale mining projects set up in rural and indigenous territory.

## Discussion and conclusions

The perception of the socio-environmental conflict in El Pangui canton is clearly associated with the large-scale mining operations of the Mirador Project. The analysis carried out in this paper highlights the fact that mining is the most significant factor when it comes to perceiving socio-environmental conflicts, as the possible social and environmental impact of mining produced in later stages is feared. However, even if the socio-environmental impact of large-scale mining is the main cause of conflict in El Pangui, it is not the only source of disagreement among the inhabitants in terms of socio-environmental aspects. The majority of the population in the canton is also aware of the fact that other conflicts existed before the mining project was embarked upon, which were caused by other factors that are not related to mining and they are concerned about matters such as the quality of the water and soil, the livestock and the agriculture, solid waste management, social cohesion and land ownership.

Both the business sector and the government emphasize the option to carry out the project in a responsible way, using different processes to reduce the impact of its mining process on the environment. This option of responsible mining has been approved by certain inhabitants, who put their hopes into getting an income and the economic development of their territory. However, the responsible mining debate has also caused a great deal of scepticism among a considerable number of inhabitants of El Pangui, especially in terms of the environmental conditions that will be produced by this type of large-scale mining project in the area on a medium and long term. The anti-mining resistance in the canton, an inter-ethnic coalition that combines elements of the Shuar cosmography with the opposition from the popular environmentalism, which is mainly represented by the farmers and local cattle raisers, shows how the arrival of the mining

project is a threat to their traditional way of life.

Focusing on the community's perception of the conflicts and the languages of valuations helps to identify the two clearly distinct groups of actors in terms of their position on mining in the case of the Mirador Project. In a way, the arguments of both groups reproduce the classic pattern of mining conflicts: while the inhabitants who are in favour of the mining use arguments such as the creation of jobs, the royalties for investment in the canton or the expected development of the region; the anti-mining group use a series of more broader and complex valuations, which range from political manipulation and the population division, to different environmental conservation and protection positions. And although some of these arguments addressed can be compared and discussed, for example on an economic level; when it comes to evaluating other socio-cultural or economic type issues, very different valuation logic comes into play, which can be immeasurable.

The issue of land tenure and ownership according to the Shuar worldview and cosmography and their own indigenous laws go against the plans to purchase the land of the mining company and the supporters of the mining project. Similarly, the ideas of some of the local representatives, not only those from the Shuar community, about respecting and preserving nature clash with the possibilities of the mining operation, and even with the ideas of an environmentally friendly type of mining.

Both the business sector and the government agencies involved in developing the projects that have a considerable impact on the environment and produce associated risks, are increasingly coming to terms with the fact that they must take into account the concerns of the local population to try and negotiate and reduce the intensity of the conflicts caused by these projects (SPADONI, 2013). One step more would be to accept the fact that the perceptions conditioned by the culture and the different languages of valuation used must be considered in the discussions. And although there are related ventures that have been embarked upon, we still have a long way to go. Especially when it comes to evaluating the environmental risks associated with the large-scale mining projects, the project must be assessed in terms of how the population perceives the environmental risks, the preferences on the decision-making mechanisms, the trust in experts and institutions and the feeling that the costs and profits have been fairly shared out (MURADIAN et al. 2003).

As suggested by Mariana Walter on this point, we have to "consider the need to develop more inclusive and balanced evaluation and decision-making mechanisms with regard to the diversity of the actors, values and interests that provide for the distribution of the decision-making power among them." (WALTER, 2008, p. 27). Accordingly the proposals for action from the academics and the social movements must be established, along with a coordinated study to monitor and evaluate the socio-environmental conflicts that arise and favour the non-violent management of them.



## Notes

- i See, for example, chapter 2 of McNeill (2003), where the author completely reviews the main mining projects throughout history, and the impact they have had on the environment and society.
- ii The population and housing census carried out by the INEC in 2010 concluded that there were 8619 inhabitants in the canton of el Pangui. INEC (2010).
- iii Interview with Soraya Díaz, coordinator of the Community Projects in the company ECSA, S.A. in June, 2012.

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# PERCEPTION OF SOCIO-ENVIRONMENTAL CONFLICTS IN MINING AREAS: THE CASE OF THE MIRADOR PROJECT IN ECUADOR

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**Abstract:** In order to analyse the socio-environmental conflicts it is essential to pay attention to people's perception, because environmental problems can lead to different forms of conflict according to local economic and socio-cultural context. The main objective of this research is to determine the perception of the public about the different socio-environmental conflicts in the area of influence of the Mirador Project, the first project of large-scale mining in Ecuador. To do so, a representative sample of the general population was used to analyse how socio-environmental conflicts were perceived. Furthermore, the arguments and reasons that led people to take extreme positions on mining were also analysed. In both cases, the opinions about perceived conflicts at the time of the investigation and expected threats with the start of mining phase were examined.

**Keywords:** Socio-environmental conflicts; Mining; Perceptions; Languages of valuation.

**Resumen:** En el análisis de los conflictos socio-ambientales es indispensable prestar atención a la percepción de la población sobre ellos, ya que las problemáticas ambientales pueden derivar en diferentes formas de conflictividad según el contexto socio económico y cultural local. El objetivo principal de esta investigación es conocer la percepción de la población sobre los diferentes conflictos socio-ambientales en la zona directa de influencia del Proyecto Mirador, el primer proyecto de minería a gran escala en el Ecuador. Para ello, se trabajó con una muestra representativa de la población general analizando de qué manera percibían la conflictividad socio-ambiental; y adicionalmente con personas de posiciones extremas respecto a la minería, para conocer los argumentos y razones que les llevaron a asumir esa posición. En ambos casos, se pulsaron las opiniones sobre los conflictos percibidos en el momento de la investigación y las amenazas esperadas con el inicio de la fase extractiva.

**Palabras clave:** Conflictos socio-ambientales; Minería; Percepciones; Lenguajes de valoración.

**Resumo:** Na análise dos conflitos socioambientais é essencial prestar atenção para a percepção das pessoas sobre eles, porque os problemas ambientais podem levar a diferentes

formas de conflito de acordo com o contexto económico e sócio-cultural local. O principal objetivo desta pesquisa é conhecer a percepção do público sobre os diferentes conflitos socioambientais na área de influência direta do Projeto Mirador, o primeiro projeto de mineração em grande escala no Equador. Para fazer isso, uma amostra representativa da população geral foi utilizada para analisar como os conflitos sócio-ambientais são percebidos, e ainda mais para as pessoas em posições extremas na mineração, para os argumentos e as razões que os levaram a tomar essa posição. Em ambos os casos, as opiniões sobre os conflitos percebidos no momento da investigação e as ameaças esperadas com o início da fase de mineração foram examinados.

**Palavras-chave:** Conflitos sócio-ambientais; Mineração; Percepções; Linguagens de valorização.

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