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Towards environmental justice success in mining resistances

An empirical investigation

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Abstract

This report sets out to provide evidence-based support for successful environmental justice (EJ) activism and assess the constituents and outcomes of contemporary socio-environmental mining conflicts by applying a collaborative statistical approach to the political ecology of mining resistances. The empirical evidence covers 346 mining cases from around the world, featured on the EJOLT website as *The EJOLT Atlas of Environmental Justice*, and is enriched by an interactive discussion of results with activists and experts. In an effort to understand both the general patterns identified in conflicts at hand, and the factors that determine EJ 'success' and 'failure' from an activist viewpoint, the experiences of EJOs that pursue EJ in mining conflicts are analysed by combining qualitative and quantitative methods.

The report employs, first, social network analysis to study the nature of the relationships both among corporations involved in the mining activity, on the one hand, and among EJOs resisting against the mining project, on the other. Both sets of conditions and cooperation are then compared to discuss ways to develop a more resilient activist network that can trigger social change and achieve EJ success. Then, multivariate analysis methods are used to examine the defining factors in achieving EJ success and to answer the following research questions: In which case a conflict is more intense? What makes EJ served? When is a disruptive project stopped? Finally, qualitative analysis, based on descriptive statistics, is conducted to investigate factors that configure the perception of success for EJ and incorporate activist knowledge into the theory of EJ. A thorough analysis of the answers given to question "Do you consider the case as an accomplishment for the EJ?" with their respective justifications help us to understand why the resistance movements consider a particular result as an EJ success or failure in the context of a mining conflict.

Overall, such analytical exercises, coproduced with activists, should be seen as a source of engaged knowledge creation, which is increasingly being recognised as a pertinent method to inform scientific debate with policy implications. We hope that the findings of this report, which brings past experiences on mining conflicts together, will be insightful and relevant for EJOs. The results and policy recommendations are open to further testing, whenever a better evidence base becomes available.

Keywords

Environmental justice success

Environmental justice failure

Social network

Mining companies

Evidence-based practice

EJ activism

Mining resistance

Intensity of conflict

Impacts

Contents

Acronyms

CEA	French Commission Energie Atomique
CNPI	Comision Nacional de Politica Indigenista
CONAIE	Confederacion de Nacionalidades Indigenas del Ecuador
CSO	Civil society organizations
EC	European Communities
EDF	Electricité de France
EIA	Environmental Impact Assessment
EJ	Environmental Justice
EJAtlas	The EJOLT Atlas of Environmental Justice
EJO	Environmental Justice Organisation
EJOLT	Environmental Justice Organisations, Liabilities, and Trade
MICLA	McGill Research Group Investigating Canadian Mining in Latin America
NGO	Non-Governmental Organisation
OCMAL	Observatorio de Conflictos Mineros de América Latina
UK	United Kingdom
USA	United States of America

Foreword

Conflicts over resource extraction or waste disposal increase in number as the world economy uses more materials and energy. Civil society organizations (CSOs) active in Environmental Justice issues focus on the link between the need for environmental security and the defence of basic human rights.

The EJOLT project (*Environmental Justice Organizations, Liabilities and Trade*, www.ejolt.org) is an FP7 Science in Society project that runs from 2011 to 2015. EJOLT brings together a consortium of 23 academic and civil society organizations across a range of fields to promote collaboration and mutual learning among stakeholders who research or use Sustainability Sciences, particularly on aspects of Ecological Distribution. One main goal is to empower environmental justice organizations (EJOs), and the communities they support that receive an unfair share of environmental burdens to defend or reclaim their rights. This has been done through a process of two-way knowledge transfer, encouraging participatory action research and the transfer of methodologies with which EJOs, communities and citizen movements can monitor and describe the state of their environment, and document its degradation, learning from other experiences and from academic research how to argue in order to avoid the growth of environmental liabilities or ecological debts. Thus EJOLT supports EJOs' capacity in using scientific concepts and methods for the quantification of environmental and health impacts, increasing their knowledge of environmental risks and of legal mechanisms of redress. On the other hand, EJOLT has greatly enriched research in the Sustainability Sciences through mobilising the accumulated 'activist knowledge' of the EJOs and making it available to the sustainability research community. Finally, EJOLT has helped to translate the findings of this mutual learning process into the policy arena, supporting the further development of evidence-based decision making and broadening its information base. We focus on the use of concepts such as ecological debt, environmental liabilities and ecologically unequal exchange, in science and in environmental activism and policy-making.

The overall **aim** of EJOLT is to improve policy responses to and support collaborative research on environmental conflicts through capacity building of environmental justice groups and multi-stakeholder problem solving. A key aspect is to show the links between increased metabolism of the economy (in terms of energy and materials), and resource extraction and waste disposal conflicts so as to answer the driving questions:

Which are the causes of increasing ecological distribution conflicts at different scales, and how to turn such conflicts into forces for environmental sustainability?

This report is the final product of EJOLT's work package on Mining and Shipbreaking, which aims at providing analysis of the links between the increased metabolism of the economy (leading to environmental damage), mining conflicts and environmental justice. It builds on a collaborative effort bringing together information on mining conflicts and experiences of EJOs in anti-mining resistances from around the world.

The empirical evidence in this report covers 346 mining cases featured on the EJOLT website as *The EJOLT Atlas of Environmental Justice,* enriched by an interactive discussion with activists and experts. The statistical approach adopted here can be seen as a first step in getting insights from maps and databases of mining conflicts to inform scientific debates with policy implications and provide evidence-based support for successful environmental-justice activism.

1 Introduction

Minerals and fossils (70 percent of all used materials) play an important role in the present state of EJ movements: While mineral extraction is a major issue in the global sustainability debate, mining conflicts, driven by increased extraction, are rising glocal phenomena

From an intellectual perspective, the intensification of environmental justice (EJ) movements worldwide is at the interplay between political ecology (Bridge, 2008; Tetreault, 2014) and social movement theories (Escobar, 1997; Bebbington et al., 2008). From a social metabolism perspective, minerals and fossils—which currently account for 70 percent of all used materials—play an important role in the present state of EJ movements: while mineral extraction is a major issue in the global sustainability debate (Krausmann et al., 2013), mining conflicts, driven by increased extraction, are a rising *glocal* phenomena (Urkidi and Walter, 2011).

Accordingly, mining conflicts is a domain of particular interest to those who wish to examine the experience of resistance struggles and provide evidence-based support for successful EJ-activism. In this context, activists' efforts to construct databases and maps of mining conflicts have sprouted. The Latin American Mining Conflict Watch (*Observatorio de Conflictos Mineros de América Latina* - OCMAL)[1], for instance, has been uniting the organizations that collaborate on establishing resistance strategies and alternatives to the mining industry in Latin America since 2007. A research group from McGill University, Montreal, listed socio-environmental conflicts related to Canadian mining companies (MICLA)[2]. The website of the '*No a la mina'* (No to the mine)[3] movement emerged during the resistance against the Esquel mining project in Argentina, and has since established itself as a resource for initiatives opposing large-scale open pit mining.

These records reveal that, from a production chain perspective, mining conflicts can occur at different stages of a mineral's lifetime (like a commodity chain) and of a mining project development. Prior to the extraction itself, conflicts may start due to problems of access to resources, for example, when land or water is taken by the project, and hence disposed from other actors and uses (Perreault, 2013). This was the case, for instance, when the Government in Botswana granted concessions for mineral exploration to diamond companies over an area encompassing the entire ancestral territories of the Gana and Gwi people (San or Bushmen). Their main borehole was cut off and majority of them were forced to relocate.

1 www.conflictosmineros.net.
2 http://micla.ca/conflicts.
3 www.noalamina.org.

Then, conflicts related with material extraction itself occur, in particular, when new mines are opened or existing ones expanded. A well-known case, in this context, is the Conga mining project, in Peru. Conflicts occur in the stage of mineral processing (such as the plants of sponge iron in Odisha, India) or related to the transport of minerals as well—as in Santa Marta Bay, Colombia, due to the marine transportation of coal extracted by Drummond in that area. Finally, there are also conflicts regarding waste management from extraction processes, as the ones related to tailing dams. Newmont's environmental liability raised from human health and environmental impacts after the closure of the La Joya project, near Oruro, Bolivia, is a paradigmatic case in point.

Again, by looking at EJO practices residing in these databases, it is also possible to see that different circumstances develop at different stages of mining conflicts, leading activists to assume diverse positions with regard to environmental justice/injustice. Some well-known projects—uranium mining in Gabon; gold mining in Wirikuta hill, Mexico; or coal in Almorzadero Paramo, Colombia, for instance—have all been successfully halted. Nevertheless, if the activists involved in each case were asked whether they consider the situation as an EJ success, they all respond very differently.

Given that it is difficult to define the concept of EJ 'success' objectively, one option is to assess the past experiences of EJOs and ask: Which circumstances do activists consider EJ successes or failures? Is it necessary or sufficient for the project to be stopped? Should suffered impacts be counted, and to what extent? What role do the intensity of the conflicts and resistance practices play in outcomes?

Against this background, this report sets out to provide evidence-based support for successful EJ-activism and assess the constituents and outcomes of contemporary socio-environmental mining conflicts by applying a collaborative statistical approach to the political ecology of mining resistances. The empirical evidence covers 346 mining cases from around the world that are featured on the EJOLT website[4] as *The EJOLT Atlas of Environmental Justice* and is enriched by an interactive discussion of results with activists and experts.

In an effort to understand both the general patterns identified in conflicts at hand, and the factors that determine EJ 'success' and 'failure' from an EJ activist viewpoint, the experiences of EJOs that pursue EJ in mining conflicts are analysed by combining qualitative and quantitative methods—including social network analysis and descriptive statistics. By doing so, the report shows how mining conflict databases can be a learning resource for activists, and how mapping can be used effectively to support EJ movements and inform policy relevant questions.

[4] www.ejolt.org

Overall, such analytical exercises, coproduced with activists, should be seen as a source of engaged knowledge creation, which is increasingly being recognised as a pertinent method to inform scientific debate with policy implications. Just as botanists collected plant records in the past, and now there is a theory of phytogeography, academics and activists are now making the joint effort to compile environmental conflict databases, and advance the theory of successful resistance and our understanding of EJ (Pullin et al., 2009; Adams and Sandbrook, 2012).

This is an effort that goes beyond and on top of the very interesting work in political ecology conducted with case-studies approach. **Figure 1** in this sense shows where we are in terms of EJ studies and what this report aims at. We hope that the findings of this report, which brings past experiences on mining conflicts together, will be insightful and relevant for EJOs. The results and policy recommendations will naturally be open to further testing, whenever a better evidence base becomes available.

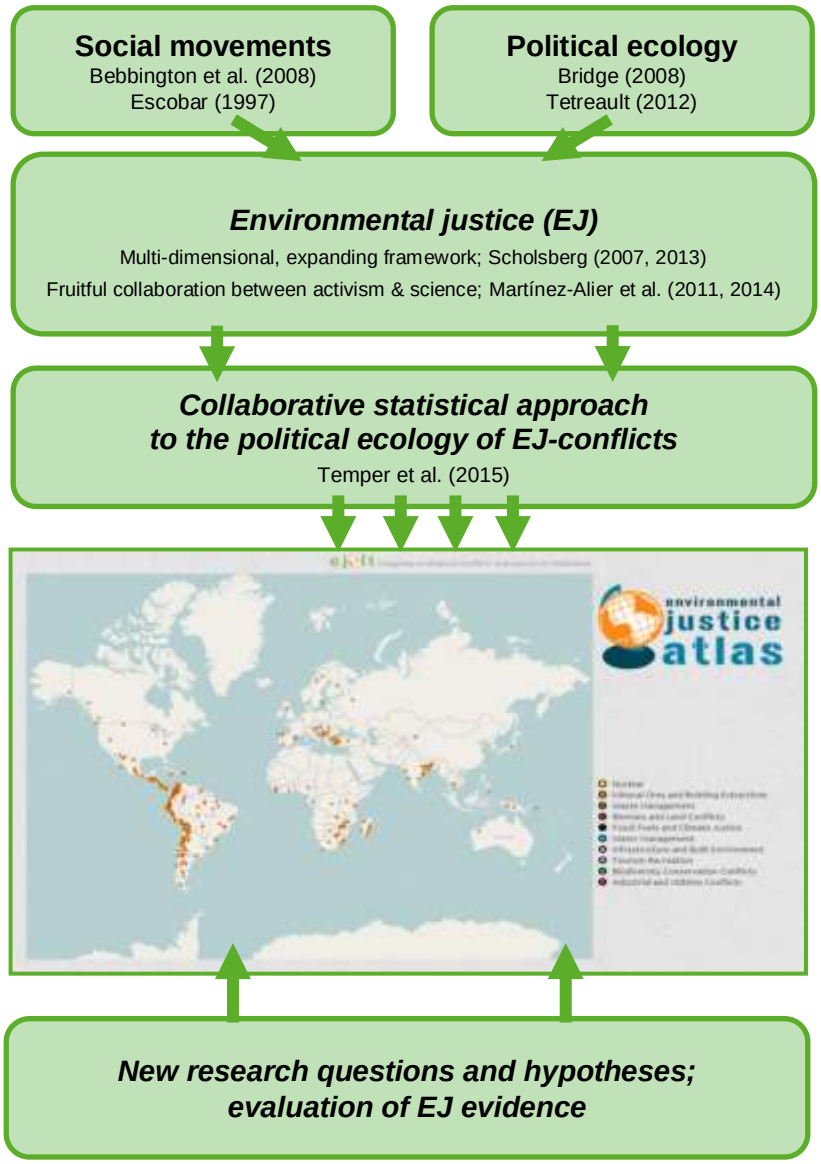


Figure 1

Mining conflicts and environmental justice

Source: Own elaboration

Following this Introduction, the methodology and materials used to compile the report are explained in **Chapter 2**. **Chapter 3** will present information on current mining conflicts through descriptive statistics and summary tables. To depict an overall picture of what EJOs face, a network analysis of the companies involved in the reported mining projects will also be provided.

Chapter 4 will then look at the way EJOs resist against mining by analysing EJO networks, and discuss aspects of the resistance movement that enable or hamper EJOs in their pursuit of EJ. **Chapter 5** aims to make a conceptual contribution to the EJ debate through an analytical interpretation of achievements reported in cases of anti-mining resistance. The final chapter concludes the report by summarising the insights gained and outlining various policy recommendations.

Photo 1

"Open democracy, not open pits: Mining justice now"

Photo credit: ithinkmining
http://ithinkmining.com/2011/06/11/the-1979-failure-of-the-churchrock-tailings-dam/#more-5607

2 Source of evidence and methods

Mining conflicts are those related to extraction, processing and transport of minerals as well as to waste management, in *specific* mining projects

As previously mentioned, the empirical evidence used in this report is from the *EJOLT Atlas of Environmental Justice*, which compiles systematic information on ecological distribution conflicts jointly provided by academics, civil society groups and individuals who are interested in supporting the efforts of EJ resistance movements (see Temper et al., 2015). Among all cases registered (around 1200 in total) in the *EJOLT Atlas of Environmental Justice* from its launch (in March 2014 based on data gathering since 2011) to October 2014, 346 were classified as mining conflicts. For selecting these entries, an operational delimitation was set up for the purpose of this report: mining conflicts are those related to extraction, processing and transport of minerals as well as to waste management, in *specific* mining projects. This restricts the idea of mining conflicts to localised processes, typically at the local or regional level.

There were indeed several levels of data refinement while gathering information:

- Along the compilation of cases in the EJOLT Atlas:
  - First, the 'academic' template—used to collect qualitative and quantitative data for cases reported by EJOs—helped specify what counts as an environmental conflict and standardised certain types of information, which made it easier to compare different cases.
  - Second, information quality was assured via the moderation of data inputs in a systematic manner.
- For the purposes of this report:
  - Third, external reviews and expert views were sought not only to check the adopted operational definition of mining conflict, but also to avoid problems of over/under-representation as much as possible in the filtering of the mining cases from the EJAtlas database.

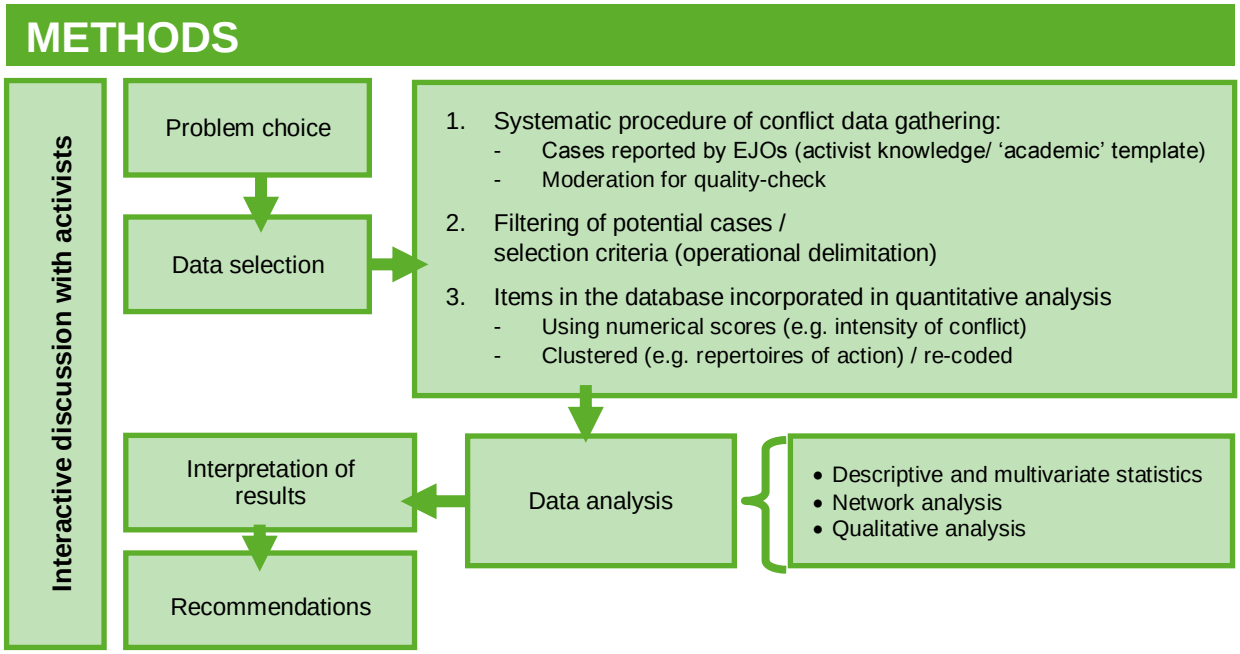


Figure 2: Methods and source of evidence

Source: Own elaboration

Even though the current list we have in the resulting database is neither exhaustive nor fully representative of mining conflicts around the world, the information it provides is most likely the best presently available in an area of utmost political relevance, especially for South America, Africa and Europe. Of course, from a geographical point of view, more conflicts from India and China could have been included. Still, the dataset is the most comprehensive of its kind currently available. The concentration of conflicts in Latin America is consistent with the wave of movements that mobilised in response to amplified investments of the mining sector over the past decade (Walter, 2014).

Region	Frequency	Percent
South America	161	46.5
Meso America+ Dominican Republic	61	17.6
Africa	43	12.4
European	41	11.8
South Asia (India + Bangladesh)	28	8.1
South East Asia and Oceania	6	1.7
USA and Canada	6	1.7
Total # of cases	**346**	**100**

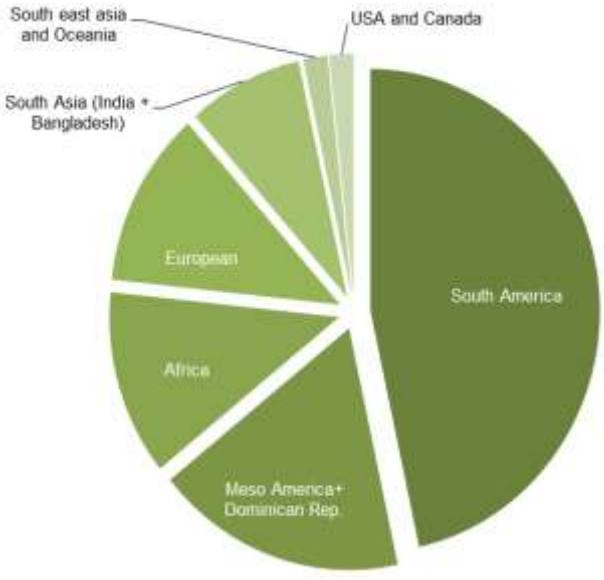
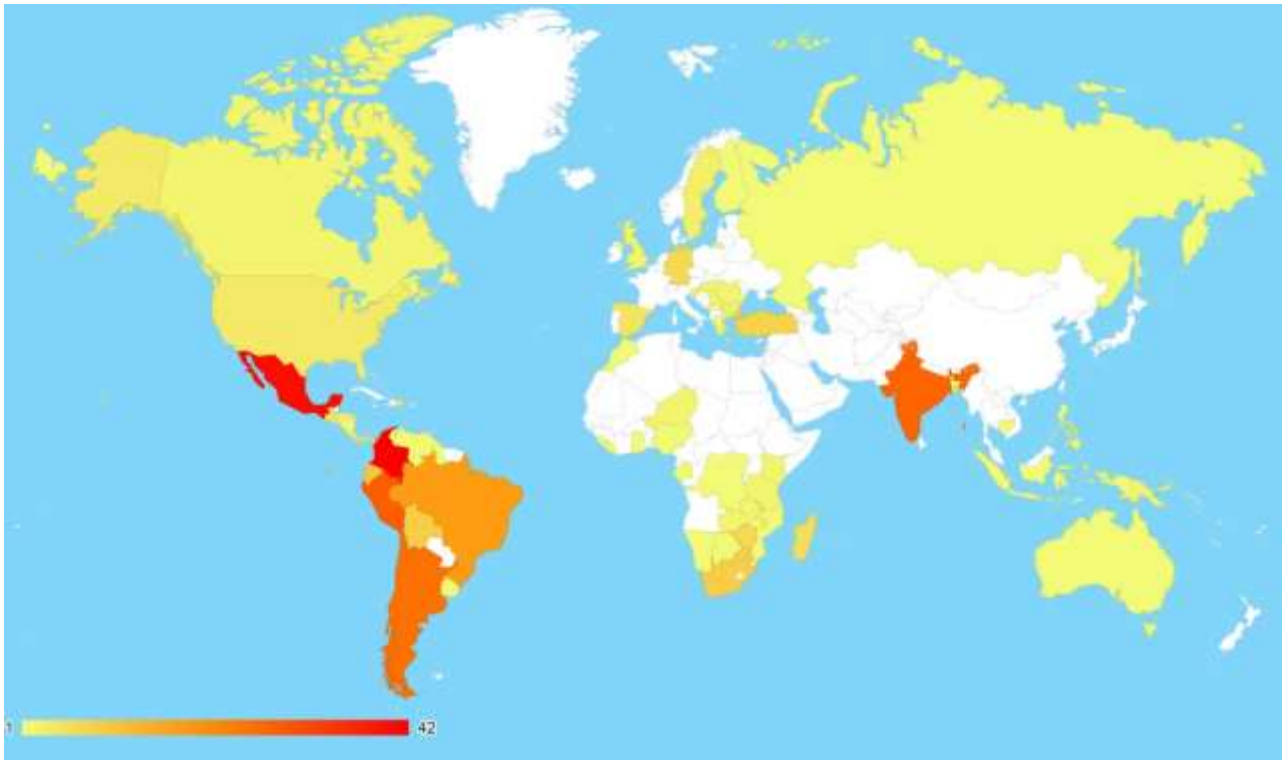


Figure 3: Mining conflicts studied by regions

Source: Own elaboration



Map 1: Mining conflicts studied by country

Source: Own elaboration

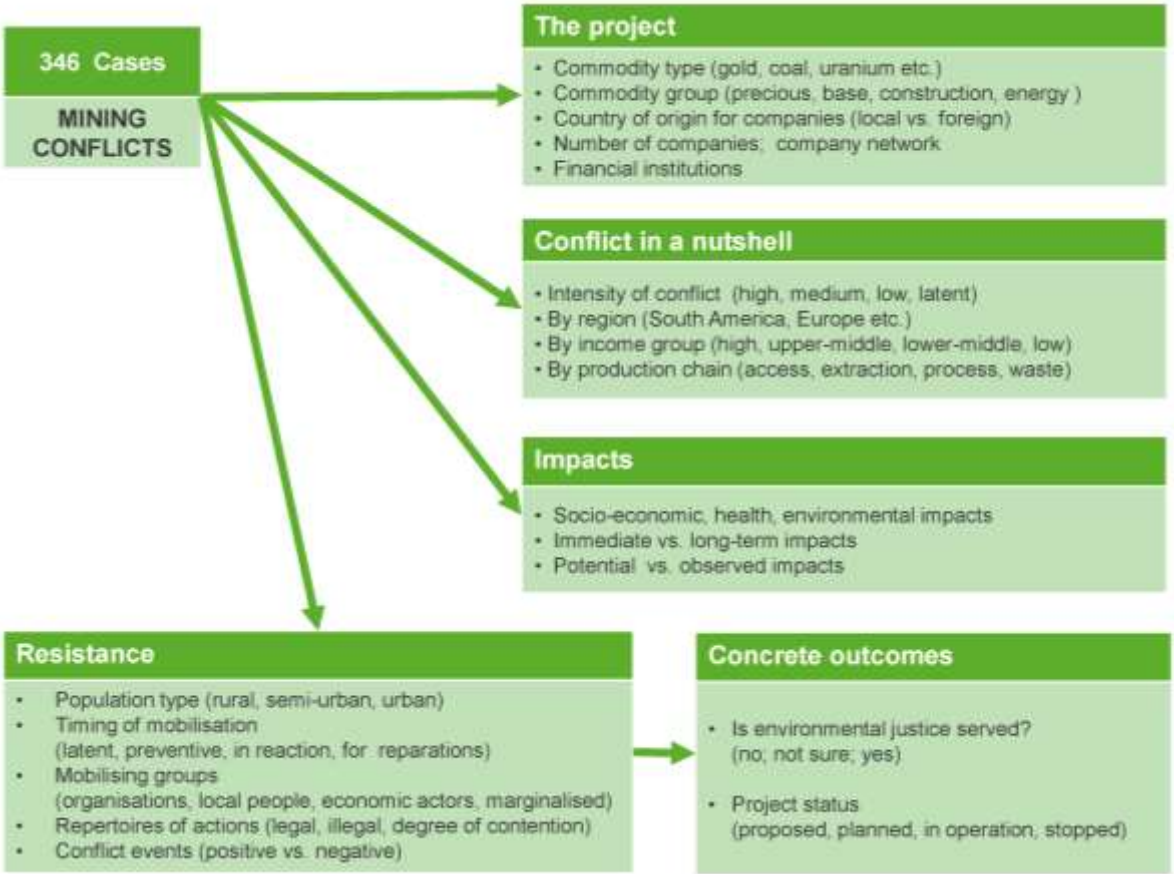


Figure 4: Data structure

Among the numerous information fields that guide entries in the database, the categories listed next are especially important and hence were selected as factors for investigation in this report. The variables at different levels of measurement (nominal, ordinal, or interval) were recorded into categories when needed and the analysis was conducted accordingly.

- *Project characteristics*: commodity groups (i.e. precious, base, energy and construction), companies (i.e., name, country of origin) and international organisations (i.e., financial, non-financial) involved;
- *Conflict characteristics*: conflict intensity (i.e., high, medium, low, latent), income level of the country (i.e., high, upper-middle, lower-middle, low) and localisation of the conflict along the commodity chain (i.e., access, extraction, process, waste);
- *Impacts*: impact group (i.e., health, socio-economic, environmental); impact type (i.e., potential; observed); impact time horizon (i.e., immediate; long-term);
- *Features of the resistance*: population type (i.e., rural, semi-urban, urban), timing of mobilisation (i.e., latent; preventive, in reaction, mobilization for reparations), mobilised groups (i.e., local people, economic actors, organisations, excluded/marginalised), repertoires of action (i.e., legal, illegal, degree of contention) and type of conflict events (i.e. positive, negative).
- Another very important field of information in the database relates to conflict outcomes, namely, the project status and the perceived level of EJ. The question *'Do you consider/think that the case represents an accomplishment in terms of EJ?*' here was of particular importance, for which there were three possible answers: 'Yes', 'I'm not sure' and 'No'. In addition to these fields of information, right after the EJ consideration question, an explanation of the answer given was requested in an open-ended format.
- *Conflict outcomes*: project status (proposed, planned, under construction, in operation, stopped) and EJ perception (yes (EJ success), not sure and no (EJ failure)).

Given this data structure, the key methods of analysis used with their respective role in the report are as follows:

(1) First, **social network analysis** is used to study the nature of the relationships both among corporations involved in the mining activity, in **Chapter 3**, and among EJOs resisting against the mining project, in **Chapter 4**.

The two sets of conditions and cooperation are then compared to discuss ways to develop a more resilient activist network that can trigger social change and achieve EJ success. This is done by using the list of mining companies and name of EJOs reported for each case.

For the aim of understanding and visualising the network formations (of the mining companies on the one hand and of EJOs on the other), we used Gephi®, an open source network exploration and manipulation software.[5]

(2) Second, quantitative analysis, namely **multivariate statistics**, is used to examine the defining factors in achieving EJ success. **Chapter 4** looks at the bivariate and multivariate relations in the data to answer the following research questions in particular:

- In which case a conflict is more intense?
- What makes EJ served?
- When is a disruptive project stopped?

Clearly, these questions are engaged with the intentions of EJOs from the beginning because they are the outcome of an interactive discussion with EJOLT partners. In terms of analysis, we first examine the binary relationships among the data and investigate the roles played, in particular, by project, conflict, and resistance characteristics and impacts (the so-called independent variables) on conflict intensity and on two conflict outcomes, EJ success and project status (the so-called dependent variables).

Here, we first run Chi-square tests for independence among the variables. The test is applied when you have two categorical variables from the same population. A categorical variable can take on one of a limited number of possible values or levels, like in a yes/no answer to a question. When independence was rejected (which means there is significant relationship) between the two variables, we looked at the strength of association between them, by using the odds ratio.[6]

Of course, examining binary relationships is not enough since factors are often correlated, and have a simultaneous effect on the dependent variable. To understand how each factor related to conflict intensity and conflict outcome separately (controlling for other factors), multivariate statistical analyses that used logit models are also carried out.[7] While answering these questions based on the EJOs experience at hand is not enough to make generalisations, the analysis will hopefully help activists and scholars discuss what can be done to strengthen resistance against mining conflicts.

[5] The software and related documentation are freely available at https://gephi.github.io/ .

[6] If the odds ratio is greater than 1, then having "variable A" is considered to be "associated" with having "variable B" in the sense that having of "B" raises (relative to not-having "B") the odds of having "A". See Healey (2009) Chapter 12 for a detailed explanation and discussion of odds ratio.

[7] Multivariate statistics analyze data with many variables (more than two) simultaneously to identify patterns and relationship. All analyses of the data were carried out with the STATA 11 software.

(3) Finally, the report employs **qualitative analysis** to try and incorporate activist knowledge into the theory of EJ, by investigating factors that configure the perception of success for EJ. **Chapter 5** makes a thorough analysis, using descriptive statistics, coding the answers given to question "Do you consider the case as an accomplishment for the EJ?" with their respective justifications to understand why the resistance movements consider a particular result as an EJ success or failure in the context of a mining conflict.

This is a delicate point that combines how activists and the communities they support perceive a protest, with concrete facts that may help explain its success or failure. Not surprisingly, the set of reasons given as explanation varied enormously. In the cases where the answer is 'I'm not sure', the varieties of the reasons were even more noticeable and complex. Apart from those few cases in which data was missing, the answers were classified as 'favourable' reasons to the EJ (such as halting of the project, obtaining of compensations, or strengthening of the social fabric) and 'unfavourable' reasons to the EJ (such as the project still being under operation, lack of compliance with legislation or the reactivation of the project as potential threat). Then, using the qualitative information provided on top of the ‘Yes’, ‘Not sure’ and ‘No’ answers, the answers to EJ perception question were coded to a scale of 0 to 5 in an ordinal gradient of ‘achievements of the EJ’. Descriptive statistics are used to summarise some features about the data and to support the qualitative analysis.

3 What do EJOs face?

Most conflicts in the dataset are related to precious and base metals; almost 85 percent occurred in rural and semi-urban areas, and some 75 percent were medium-to-high intensity conflicts

This chapter intends to give EJOs a broader understanding of the conditions they face when they are involved in mining conflicts. In this context, the first section presents the general characteristics of the mining conflicts at hand and the second section provides the mining company network for the 346 cases under investigation.

3.1 A characterisation of mining conflicts: Data summary

In cases of mining conflict, factors such as type of mineral commodity, income level in the country where the project takes place, or the specific characteristics of the mobilisation movements against a given project are relevant to frame the role played by environmental defenders. In this context, the main descriptive statistics for the analysed data are provided below in **Table 1**, which shows how the mining conflicts were distributed according to various characteristics related to the projects, the conflicts, the resistance movements and concrete outcomes.

A great majority of the conflicts in our dataset was related to precious and base metals; almost 85 percent occurred in rural and semi-urban areas, and some 75 percent were medium-to-high intensity conflicts. While many of these conflicts and resistance movements were initiated as preventive measures prior to project construction (40 percent), an important share (33 percent) was in reaction to project implementation, when construction actually began.

Here it is telling that projects were stopped in only one in five cases (71 out of 346), while in almost half of the conflicts, the projects were ongoing. In addition, when activists were asked ‘Do you think that EJ has been served?’ with regards to perceptions of EJ success, the answer was ‘Yes’ in only 20.5 percent of the cases. A thorough examination of the perception of EJ success will be presented in **Chapter 5**.

Table 1:

Distribution of mining conflicts by certain characteristics

Source: Own elaboration from EJAtlas database

Mining conflicts	Categories	Frequency	Percent (%)
By main commodity	Base metals (e.g. copper)	124	35.8
	Construction related (e.g. sand, limestone)	23	6.6
	Energy related (e.g. coal, uranium)	64	18.5
	Precious (e.g. gold, silver)	135	39.0
	Total # of cases	***N=346***	***100.0***
By income	Low-income economies	26	7.5
	Lower-middle-income economies	58	16.8
	Upper-middle-income economies	206	59.5
	High-income economies	56	16.2
	Total # of cases	***N=346***	***100.0***
By type of population	Rural	219	63.3
	Semi-urban	70	20.2
	Urban	50	14.5
	Unknown	7	2.0
	Total # of cases	***N=346***	***100***
By intensity	Latent (no visible organising at the moment)	20	5.8
	Low (some local organising)	65	18.8
	Medium (street protests, visible mobilization)	158	45.7
	High (widespread, mass mobilisation, violence, arrests, etc.)	103	29.8
	Total # of cases	***N=346***	***100***
By presence of international non- financial inst.	No	315	91.0
	Yes	31	9.0
	Total # of cases	***N=346***	***100***
By presence of international financial inst.	No	314	90.8
	Yes	32	9.2
	Total # of cases	***N=346***	***100***
By timing of mobilization	Latent (no visible resistance)	7	2.0
	Preventive resistance (precautionary phase)	137	39.6
	In reaction to the implementation (during construction or operation)	114	32.9
	Mobilization for reparations once impacts have been felt	82	23.7
	Unknown	6	1.7
	Total # of cases	***N=346***	***100.0***
By EJ success	No	160	46.2
	Not sure	115	33.2
	Yes	71	20.5
	Total # of cases	***N=346***	***100***
By project status	Stopped	71	20.5
	Proposed (exploration phase)	70	20.2
	Planned (decision to go ahead e.g. EIA undertaken, etc.)	28	8.1
	Under construction	26	7.5
	In operation	144	41.6
	Unknown	7	2.0
	Total # of cases	***N=346***	***100***

Moreover, as depicted in **Table 2**, an overwhelming majority of cases (91 percent) may be considered extraction-driven, and more than half (56 percent) incorporated access-related considerations. Again, in almost half of the cases (42 percent), waste was an issue as well. Although transport is clearly a step in the product chain, it has not been assessed for the purposes of this analysis. Cases related with transport are distributed along the categories of extraction, processing and waste.

Stage in the commodity chain	N	% of total cases
Resource access	194	56
Extraction	315	91
Processing	118	34
Waste	145	42
Total # of cases	346	

Table 2:

Mining conflicts in the product chain

Note: In the tables of this chapter, 'N' indicates the number of times that the indicated item has been observed or reported

Source: Own elaboration from EJAtlas database

Table 3 lists the events that occurred during and after mining conflicts, and their respective frequencies. Since it is possible for more than one event to occur during each case, there are a total of 1,505 events reported for the 346 cases. Although what might be considered positive events did occur with some frequency during the conflicts, such as the enforcement of existing regulations, increased participation, and compensation (43 percent, 34 percent, and 30 percent, respectively), corruption, the criminalisation of activists, repression and displacement were not uncommon (32 percent, 29 percent, 27 percent, and 26 percent, respectively).

For the sake of statistical analysis, this information was later recoded into positive and negative event categories. Here, the enforcement of existing regulations, increased participation, compensation, favourable court decisions, environmental improvements and rehabilitation, negotiated alternative solutions and fostering a culture of peace were considered positive events from an activist perspective, and hence categorised as positive. Meanwhile, the criminalisation of activists, corruption, repression, migration/displacement, violent targeting of activists, deaths and unfavourable court decisions were categorised as negative.[8]

[8] As some events are in the grey area and can be considered either positive or negative depending on the context, they were left in the 'unsure' category.

Table 3:

Events encountered in mining conflicts

Source: Own elaboration from EJAtlas database

Events during and after the conflict	N	% of total cases
Application of existing regulations	143	43
Strengthening of participation	113	34
Corruption	106	32
Compensation	100	30
Criminalization of activists	96	29
Repression	91	27
Migration/displacement	85	26
Violent targeting of activists	84	25
New environmental impact assessment/study	78	23
Deaths	65	20
Under negotiation	64	19
New legislation	58	17
Court decision (victory for environmental justice)	52	16
Environmental improvements, rehabilitation/restoration of area	47	14
Project cancelled	38	11
Institutional changes	34	10
Land demarcation	32	10
Court decision (failure for environmental justice)	31	9
Negotiated alternative solution	28	8
Technical solutions to improve resource supply/quality/distribution	28	8
Withdrawal of company / investment	11	3
Court decision (victory)	7	2
Project temporarily suspended	8	2
Court decision (undecided)	7	2
Fostering a culture of peace	6	2
Moratoria	6	2
Court decision (failure)	2	1
No / insufficient / unpaid compensation	2	1
Lack of representation & participation	1	0
Other	82	25
Total # of reportings	1505	
Base (Total # of cases)	346	

Mobilising groups	N	% of total cases
Neighbours/citizens/communities	244	72
Local EJOs	235	69
Farmers	189	56
Social movements	163	48
Indigenous groups or traditional communities	160	47
Local government/political parties	132	39
Local scientists/professionals	128	38
Ethnically/racially discriminated groups	74	22
International EJOs	72	21
Women	67	20
Industrial workers	40	12
Artisanal miners	39	12
Trade unions	37	11
Religious groups	32	9
Fishermen	30	9
Recreational users	28	8
Landless peasants	25	7
Pastoralists	19	6
Informal workers	15	4
Total # of reportings	1729	
Base (Total # of cases)	346	

Table 4:

Groups mobilising against mining projects

Source: Own elaboration from EJAtlas database

Table 4 presents the groups that mobilised against mining projects. An overall look at percentages shows just how important local communities (involved in 72 percent of cases) and local EJOs (involved in 69 percent of cases) are in these movements, as well as farmers (present in 56 percent of cases), indigenous communities (present in 47 percent of cases) and ethnically/racially discriminated groups (involved in 22 percent of cases).

Then **Table 5** classifies the mobilising groups as: (1) local people (all categories except social movements, international EJOs, trade unions and religious groups), (2) organisations (local EJOs, social movements, political parties, international EJOs, trade unions, and religious groups), (3) economic actors (farmers, local scientists/professionals, artisanal miners, trade unions, fishermen, landless peasants, pastoralists, informal workers), and (4) excluded/marginalised groups (indigenous, traditional communities, ethnically, racially discriminated groups, women and informal workers).

Types of mobilising groups	N	% of total cases
Local people	334	96.5
Organisation	313	90.5
Economic actor	269	77.7
Excluded/Marginalised	221	63.9
Total # of cases	346	

Table 5:

Categories of mobilising groups (re-coded)

Source: Own elaboration from EJAtlas database

Tables 6, 7 and **8** organise the environmental, health and socio-economic impacts most frequently reported by EJOs for these 346 cases within a risk frame, namely, as potential versus observed/documented and a time frame, as immediate versus long-term impacts. When a particular type of impact is not reported, i.e. the field corresponding to that type was left empty in the database, the tables indicate 'No reporting'.

In **Table 6**, which delineates environmental impacts, the frequency of reported issues — water pollution and decreasing water levels, groundwater pollution or depletion, soil contamination and food insecurity—that touch upon local people's livelihoods is particularly striking. In a similar vein, human rights violations, displacement, land dispossession, and the loss of traditional practices seem to be the most frequently reported socioeconomic impacts in **Table 8**. **Table 9** then summarises all this information on key impact categories as potential versus observed and immediate versus long-term.

Table 6:

Type of environmental impacts reported in mining conflicts (percentage of total cases)

Source: Own elaboration

Environmental impacts	Observed or documented	Latent, potential or uncertain	No reporting
Surface water pollution / Decreasing water level	45%	44%	10%
Loss of landscape/aesthetic degradation	44%	38%	19%
Soil contamination	41%	44%	15%
Deforestation and loss of vegetation cove	33%	37%	30%
Groundwater pollution or depletion	30%	56%	14%
Air pollution	30%	46%	25%
Biodiversity loss (wildlife, agro-diversity etc.)	26%	45%	30%
Soil erosion	24%	34%	41%
Mine tailing spills	22%	49%	29%
Food insecurity (crop damage)	22%	43%	35%
Large-scale disturbance of hydro and geological systems	21%	45%	34%
Waste overflow	21%	38%	41%
Noise pollution	19%	23%	58%
Reduced ecological / hydrological connect	18%	39%	44%
Desertification / drought	8%	33%	60%
Global warming	8%	26%	67%
Floods (river, coastal, mudflow)	4%	10%	85%
Genetic contamination	1%	7%	91%
Fires	1%	5%	94%
Oil spills	1%	4%	96%
Total # of cases	**346**		

Health impacts	Observed or documented	Latent, potential or uncertain	No reporting
Exposure to unknown or uncertain complex risks	17%	22%	61%
Occupational disease and accidents	14%	24%	62%
Other environmental related diseases	13%	18%	69%
Deaths	12%	19%	69%
Violence related health impacts (e.g. homicides, rape)	11%	15%	74%
Accidents	8%	24%	68%
Mental problems including stress, depression	7%	17%	76%
Malnutrition	6%	14%	81%
Infectious diseases	6%	12%	82%
Health problems related to alcoholism, prostitution	4%	22%	74%
Total # of cases	**346**		

Table 7:

Health impacts reported in mining conflicts (percentage of total cases)

Source: Own elaboration

Socio-economic impacts	Observed or documented	Latent, potential or uncertain	No reporting
Violations of human rights	37%	27%	37%
Land dispossession	34%	32%	35%
Loss of livelihood	33%	46%	21%
Displacement	31%	42%	28%
Loss of landscape/sense of place	28%	38%	34%
Increase in corruption /co-optation	27%	32%	42%
Loss of traditional knowledge/practices	23%	33%	44%
Militarisation and increased police pressure	23%	27%	50%
Lack of work security, labour absenteeism	17%	30%	53%
Increase in violence and crime	16%	26%	59%
Specific impacts on women	8%	24%	67%
Social problems (alcoholism, prostitution)	7%	20%	73%
Total # of cases	**346**		

Table 8:

Socio-economic impacts reported in mining conflicts (percentage of total cases)

Source: Own elaboration

Table 9:

Impact groups (recoded)

Source: Own elaboration from EJAtlas database

Impact groups		% of total cases	Mean # reported
Environmental impacts	Immediate, potential	83	3.7
	Long term, potential	78	3
	Long term, observed	61	2.4
	Immediate, observed	54	1.8
Health impacts	Immediate, potential	58	1.3
	Long term, potential	35	0.6
	Immediate, observed	31	0.6
	Long term, observed	25	0.4
Socio-economic impacts	Immediate, potential	79	3.1
	Immediate, observed	63	2.2
	Long term, observed	50	0.6
	Long term, potential	49	0.7

All possible relationships among data variables, and in particular, between the independent and the selected dependent variables were tested using Chi-square tests. Whenever there was a significant relationship, the strength of association was checked by calculating odds ratios. Relationships that were not statistically significant have not been reported. Results revealed the following patterns in general.[9]

- *Commodity type and timing of mobilisation* appear to be related. When the mining conflict concerned precious metals, mobilisation typically began at the preventive stage (odds ratio: 1.75 against base metals; 1.66 against energy-related materials) and was less likely to occur as a reaction (odds ratio: 0.91 against base metals; 0.75 against energy-related materials) (**Appendix 2**, **Table 2.1**). This is not unexpected, as most gold mining conflicts start during the exploration stage when residents understand that

[9] Relationships in the data that revealed a significant pattern, but have not been explicitly reported here, were a reflection of data consistency. Project status and potential impacts, for instance, appear to be related; if a conflict arose with regards to potential impacts, the project was less likely to be operational, and more likely to be in the planning stage. This should be seen as a reflection of data consistency, rather than as a finding.

the gold mine will threaten their precious resources — land and water, particularly in the case of open-cast mining. Cases of successful paralysation of gold mining projects in the late 1990s and early 2000s (as in Tambogrande, Peru, and Esquel, Argentina) have such demonstrative effects that other mobilised communities may try to replicate.

- Similarly, *conflict type and timing of mobilisation* appear to be related as well. When the conflict arose due to waste, mobilisation was more often related to reparation (odds ratio 2.16), while in conflicts due to extraction, mobilisation was more likely to transpire during the preventive stage (odds ratio: 3.24) (**Appendix 2**, **Table 2.2**). This is presumably associated with the fact that in conflicts driven by mining waste (e.g., tailing ponds, waste rock dumps), people begin to mobilise when there is an actual incidence, and only after impacts on the environment are felt. This also explains why claims are more towards reparation.

In low and lower-middle income countries, mobilisation more commonly occurred as a reaction; whereas in high and upper-middle income countries, mobilisation was more likely during the prevention stage

- *National income and timing of mobilisation* were also found to be related. In low and lower-middle income countries, mobilisation more commonly occurred as a reaction (odds ratio: 7.44 and 3.80 respectively against high income; 6.66 and 3.40 again for low and lower-income against upper-middle income); whereas in high and upper-middle income countries, mobilisation was more likely during the prevention stage (odds ratio: 0.28 and 0.17 for high income against low and lower-middle income respectively, and 0.36 and 0.22 for upper-middle income against low and lower-income) **(Appendix 2, Table 2.3**). Possible explanations might be lack of access to knowledge and resources in low and lower-middle income countries, and/or low population density that makes it difficult to share concerns and organise local responses.
- It is also worth noting that *commodity type and presence of potential impacts* were related. This was true for all potential (immediate and long-term) impacts, except for socio-economic long-term impacts. When potential environmental and health impacts were reported, mining conflicts were more likely to arise due to precious metals (odds ratio: 3.68, 1.78 for immediate environmental and health respectively, and 1.3, 2.01 for long-term impacts) **(Appendix 2, Table 2.4)**. This finding parallels the above remark; communities are aware of the threats related to health and the environment in the case of gold mining, because cyanide is used in the process. The fact that potential long-term socio-economic threats was not statistically significant is hardly surprising, however; it is presumably more difficult to think about these impacts with regards to precious metal mining, and consequently, there was no difference among commodities in this respect.
- Moreover, *national income and observed impacts* were also related. In line with the findings mentioned above, observable long-term environmental impacts were unsurprisingly more common when income was low, and less common when income was high (odds ratios: 2.91, 1.17, 0.90, and 0.65 respectively for low income, lower-middle income,

upper-middle income, and high income) **(Appendix 2, Table 2.5)**. This finding is crucial to interpret mining conflicts as environmental justice issues, as it points out clear problems of distributive justice in mining developments. Similarly, observable health impacts were more common in low income countries, and less common in high income nations. This was true for both immediate and long-term observed impacts (odds ratios for observed immediate health impacts: 2.85, 1.60, 0.69, and 0.63 respectively for low income, lower-middle income, upper-middle income, and high income; for observed long-term health impacts: 3.95, 1.29, 0.79, and 0.45; again respectively) **(Appendix 2, Table 2.6)**. This is presumably because as the resistance begins to react, the project is more likely to be operational in lower-income countries.

- Finally, when excluded/marginalised groups (e.g., women, indigenous people, ethnically/racially discriminated groups, informal workers) were involved, negative events such as corruption, criminalisation of activists, repression, displacement dominated the conflict more than positive events, such as the enforcement of existing regulations, increased participation, compensation (odds ratio: 1.35). Yet, when economic actors were involved in the resistance, positive events were more likely (odds ratio: 2.59) and negative events were less likely to dominate (odds ratio 0.87) the conflict **(Appendix 2, Table 2.7)**. This might be because it is much easier for the government and companies to put pressure on marginalised groups compared to economic actors.

Photo 2:

An anti-mining graffiti in Argentina: "Water is worth more than gold; No to mega mining"

Photo Credit: https://watermelontravels.wordpress.com/2012/10/09/my-not-so-serious-traveling-hat/

3.2 The network of mining companies

Investigating the network structure of mining corporations is important to better comprehend the strategies they use to access the frontiers of extraction. In this section, we employ social network analysis to examine and better understand the relationships and coalitions among national and international mining corporations. A coalition network was constructed for mining companies (**Figure 5**), by using the 600 companies reported in an open-ended manner in the 346 mining cases under analysis. As explained in **Chapter 2**, an open source network exploration software (Gephi®) was used for this purpose.

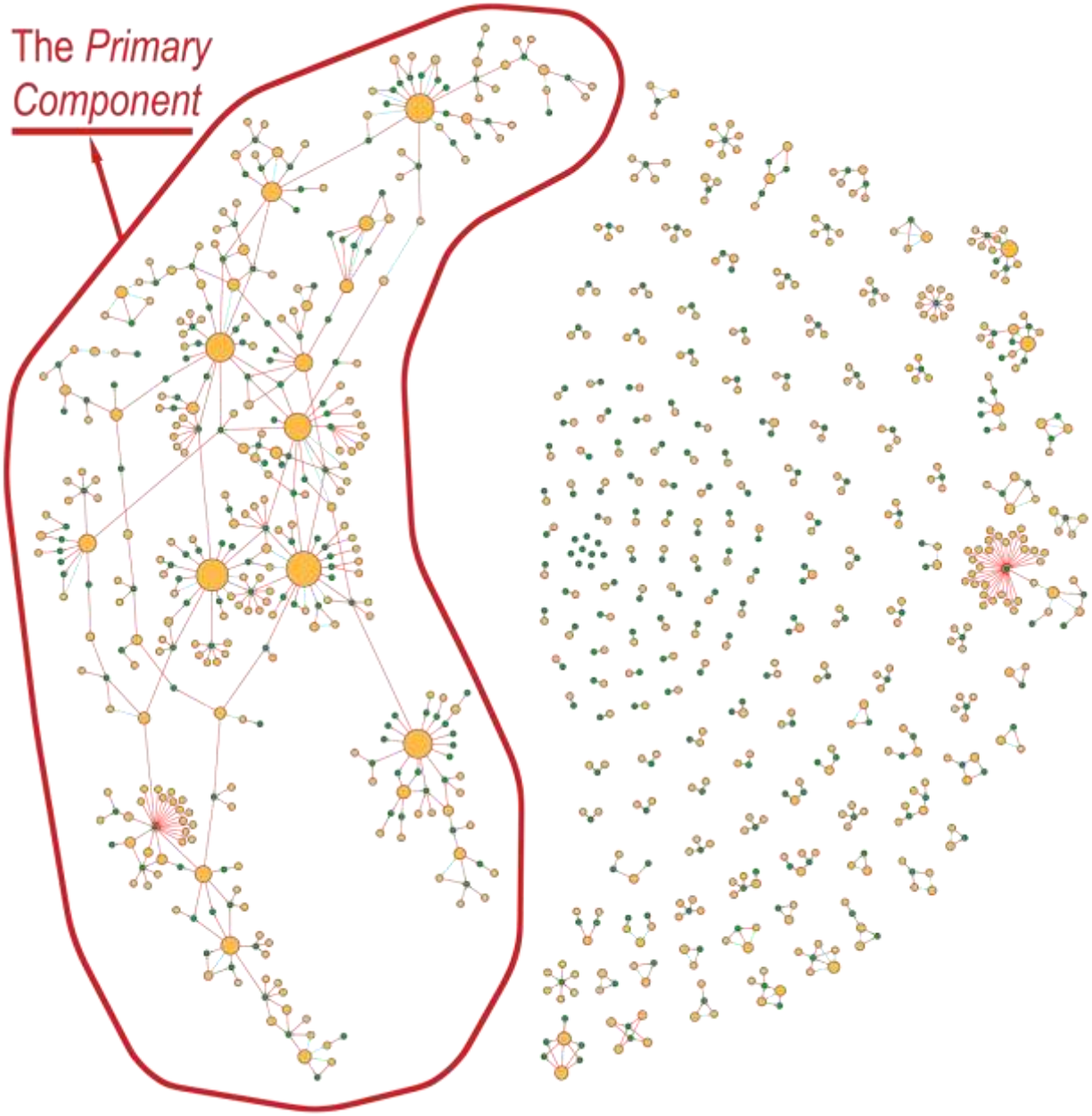


Figure 5: The network of mining companies

Company
Conflict
Link from company to conflict
Link from parent company to subsidiary

Some basic information to facilitate reading of the network analysis is provided in **Box 1**.

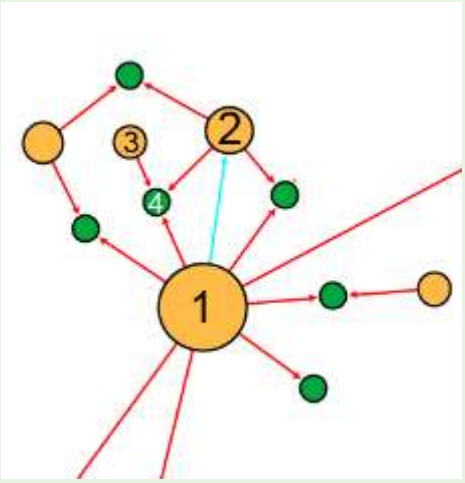
BOX 1: How to read the company network? *Basic concepts and definitions* (Jackson, 2008)

In the company network, nodes (●) represent companies (in orange) and conflicts (in green). Node colour and size are determined according to their properties.

Links (⟶) define the relationship between nodes.

What are components? Not all nodes are connected to every other node in a network. Some nodes are directly or indirectly connected to a large number of other nodes, whereas some nodes are isolated, or may be connected to smaller number of other nodes, creating sub-groups which are called components. In our setting of corporate coalitions, there is a big *primary* component and many other smaller components.

What do we mean by centrality? It is possible to differentiate the relative importance (centrality) of a node in a network by looking at its location and connections in the network. There are different measures of centrality and in the company network the main centrality measure is the ***outdegree centrality***, which measures the connectedness of a particular node, by counting the links that branch out from that node. For example, in the setting of the company network, nodes are the companies (●) and conflicts (●). When a company is involved in a conflict, it is shown with a red link (⟶) and subsidiary companies are linked to their parent companies by blue links (⟶).



The size of the nodes is determined by their *outdegree centrality*. The bigger the node, the more conflicts a company is involved in.

Node1 is the parent company of *Node2,* and together they make a coalition with *Node3* (another independent company) and operate in the conflict denoted as *Node4. Node1* is bigger since this particular company is involved in more conflicts as well (shown with outgoing lines).

The analysis unveiled that the mining companies' network consists of many components (sub-networks) of different sizes. Almost half of the conflicts are located in the biggest part of this network, labelled here as the primary component. A detailed view of this primary component of the network is provided in **Figure 6.** This contains 147 conflicts (43% of the total # of cases) and 237 companies (40% of the total # of companies) with 451 links in total with an average of 3 links per company.

In this big component, most of the companies central to the network (i.e. involved in many conflicts) are well-known big/international companies [e.g., Vale S.A (based in Brazil), Rio Tinto (based in the UK), BHP Billiton (based in Australia), Barrick Gold Corporation (based in Canada); Glencore-Xstrata (based Switzerland); Anglo Gold Ashanti (based in South Africa)]. These big companies are well-connected not only among themselves, but also to other national firms. There are also many instances in the network where multinational companies establish their own national subsidiaries. In general, this is argued by EJOs to be

Most of the companies central to the network (i.e. involved in many conflicts) are well-known big/international companies

a strategy to overcome national regulations that prevent the participation of international investors, or to deliberately hide the involvement of multinational companies. Another important point to draw attention is that not all are specialised in the mining industry. Some such as Glencore-Xstrata are commodity traders, underlying the important role international trade plays as a driving force of local conflicts.

Photo 3:

People protesting Glencore (which later became Glencore-Xstrata by acquiring Xstrata)

Photo Credit: Emily Haavik
http://www.lakevoicenews.org/northlanders-protest-polymet-mining/

Photo 4:

People protesting Barrick Gold, one of the largest gold mining corporations

Photo Credit: Allan Lissner
http://allan.lissner.net/event-protest-barrick-golds-shareholder-meeting/

Photo 5:

The indigenous The Dongria Kondh tribe protests Vedanta

Photo Credit: Survival International
http://www.survivalinternational.org/tribes/dongria

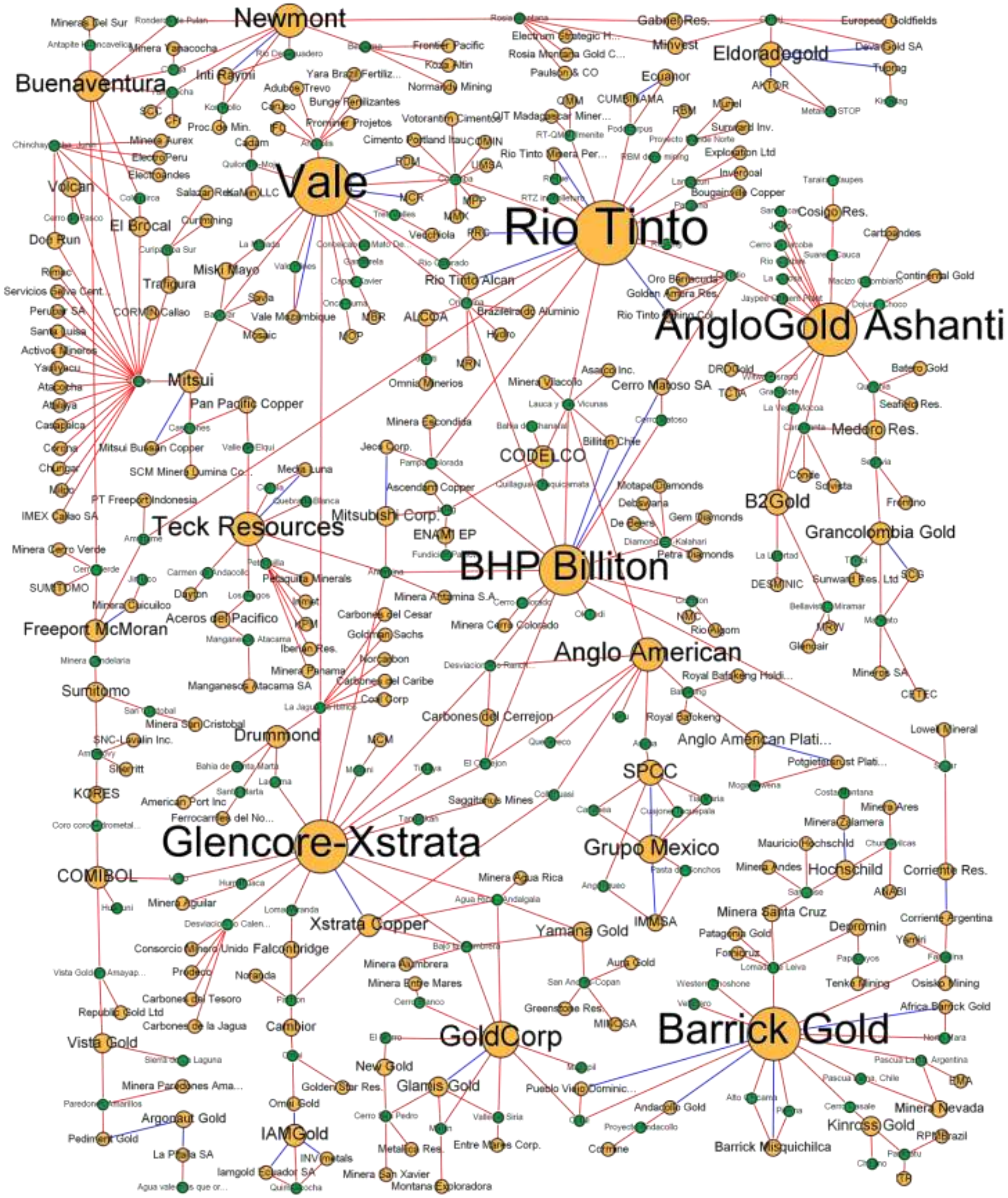


Figure 6: Detailed view of the primary component of the network of mining companies

Moreover, not all important and well-known companies are in the primary component of the network. Some big companies are weakly connected to the primary component, or just located in smaller, isolated components of the network. Yet, these companies have their own spheres of influence for a particular commodity or a specific region. For instance, AREVA (the uranium mining giant, based in France) has its own small uranium mining network and creates its own sphere of influence by making coalitions with local subsidiaries—Chinese firms, and French utility companies (EDF and CEA) (framed in red in **Figure 7**). Similarly, Vedanta (the metal mining company, based in UK, known for its operations in India), Tata Group (the Indian conglomerate industrial company, based in India) have their commodity or region of specialization and are located in these isolated and smaller (but not less important) components of the network (see **Figure 7**).

Figure 7 shows some other important components of the network. In some cases, a company that is not very well-known publicly can be involved in conflicts that are far apart in geographical terms. Alamos Gold, for instance, is involved in two conflicts (framed in blue in **Figure 7**); one in Turkey (the case of Ida Mountain) and one in Mexico (the case of *Mina de Oro Nacional afecta al pueblo de Mulatos*).

The company network is not meant to say that all companies follow the same policies in addressing anti-mining protests or in their relations with opposing communities. However, demonstrating that a network of relationships indeed exists among companies with regards to conflicts brings two aspects to the table. First, mining companies have a common, though differentiated, interest in responding to mining conflicts, which arguably creates difficulties for their business operations. Second, should a common framework to tackle conflicts be established, a network of corporate relationships would facilitate its development, dissemination and operation. The Global Mining Initiative, for instance, promoted by the International Council on Mining and Metals (ICMM), may be used an example of a globally-shared discourse that uses ‘sustainable mining’ as a slogan and presents the industry as a generator of societal benefits, while legitimising access to resources and intervention in the social life of communities and regions (Garibay, 2015).

This analysis tells many individual stories as well. It is up to the EJOs to use the information in the network as they deem fit. The analysis is useful in particular in placing their resistance movements within a broader picture and in pointing to EJOs where it might be beneficial to collaborate and join forces.

The report now moves on to discuss the characteristics of the mining resistance and the factors that enable and hamper EJOs in their pursuit of EJ.

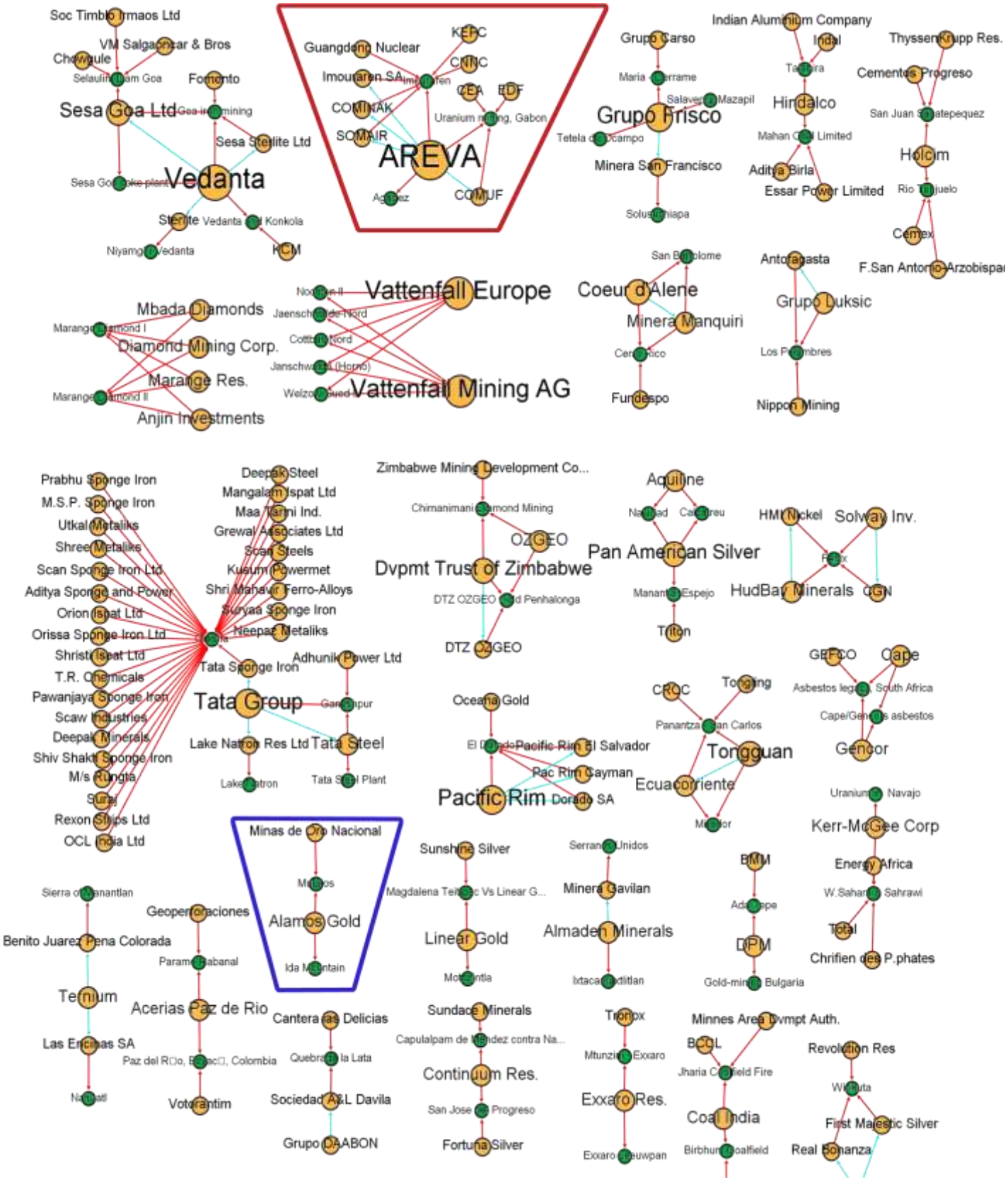


Figure 7: Detailed view of the other important components of the mining companies' network

4 What aspects of resistance enable/hamper EJOs in their pursuit of environmental justice?

To better understand the overall picture of the mining resistance and reveal the main parties involved in mining conflicts, we took another look at the 346 mining conflicts selected and processed the information at hand on resisting groups and resistance practices.

4.1 The mining resistance network

In response to an open-ended question on the support networks involved in their respective conflicts, activists had named a total of 1,092 *EJOs and other supporting organisations*. This information was re-coded and organised into two main categories:

i) *Organisation type*: Community organisations, non-environmental NGOs, environmental NGOs/EJOs, religious organisations/charities, governmental organisations, human rights organisations, political parties, research organisations;

ii) *Scale of operation*: Local, national, international.

An examination of organisation types included in the data revealed that among the 1092 named entities reported, EJOs and environmental NGOs (e.g., Za Zemiata in Bulgaria, Accion Ecologica in Ecuador, or Focus in Slovenia) have the largest share (43.0%), followed by non-environmental NGOs (e.g. Indian Federation of Trade Union in India, or American Association for Justice in USA) (27.6%) and community organisations (e.g., Comité Cívico Prodefensa de Marmato in Colombia, or Tlatlauquitepec Community in Mexico) (18.5%).

Research organisations (e.g., Universidad Nacional Autónoma de México) (4.0%), human rights organisations (Amnesty International) (2.1%), religious organisations (e.g., the Catholic Relief Services; Pax Christi International) (2.7%) and political parties (e.g., the Green Party in Germany, and Communist Party of India) (1.5%) also have some presence in the dataset. In seven instances (0.6%), governmental organisations (e.g., Zimbabwe National Water Authority) were reported among the actors fighting for EJ.

The crucial role that indigenous groups play in anti-mining struggles was also highlighted by the data: There were 77 indigenous organisations or groups listed (e.g., *Confederación de Nacionalidades Indigenas del Ecuador* (CONAIE) in Ecuador, *Comissão Nacional de Política Indigenista* (CNPI) in Brazil, or Mapuche Tehuelche communities in Meseta Central Norte in Argentina) (7.0% of all entities reported). In 21 out of 346 cases, no EJOs or other organised groups were reported in particular. In these cases, local residents were the main resistance group.

Table 9:

Mobilising organisations according to their types

Source: Own elaboration using EJAtlas database

Organisation Type	Colour	Frequency	Percentage
EJO/Environmental NGOs		470	43.0
Non-environmental NGOs		301	27.6
Community / Residents		202	18.5
Research organisations		44	4.0
Religious organisations/Charities		29	2.7
Human rights organisations		23	2.1
Political parties		16	1.5
Governmental organisations		7	0.6
Total # of organisations		**1,092**	

It is also worth noting that 189 of the reported entities (17.3%) had already been networks themselves (e.g., platforms, alliances, campaigns, coalitions, and movements), such as London Mining Network in the UK, Turgutlu Environment Platform in Turkey, or Friends of the Earth International. This suggests that anti-mining activists are well-aware of the value of cooperation and collaboration.

On this background, the mining resistance network for the reported conflicts can be depicted in a manner similar to the network of companies. **Figure 8** illustrates this network, according to organisation type.[10] Here, conflicts are represented by grey nodes (), and coloured nodes represent the different types of organisations involved in the resistance, of which there are eight: EJOs and environmental NGOs (), Communities and residents (), non-environmental NGOs (), religious organisations (), governmental organisations (), human rights organisations (), political parties (), and research organisations ().

[10] Given the vulnerability of the environmental justice defenders (Global Witness, 2014), to protect resisting groups from possible threats and attacks, nodes are kept anonymous.

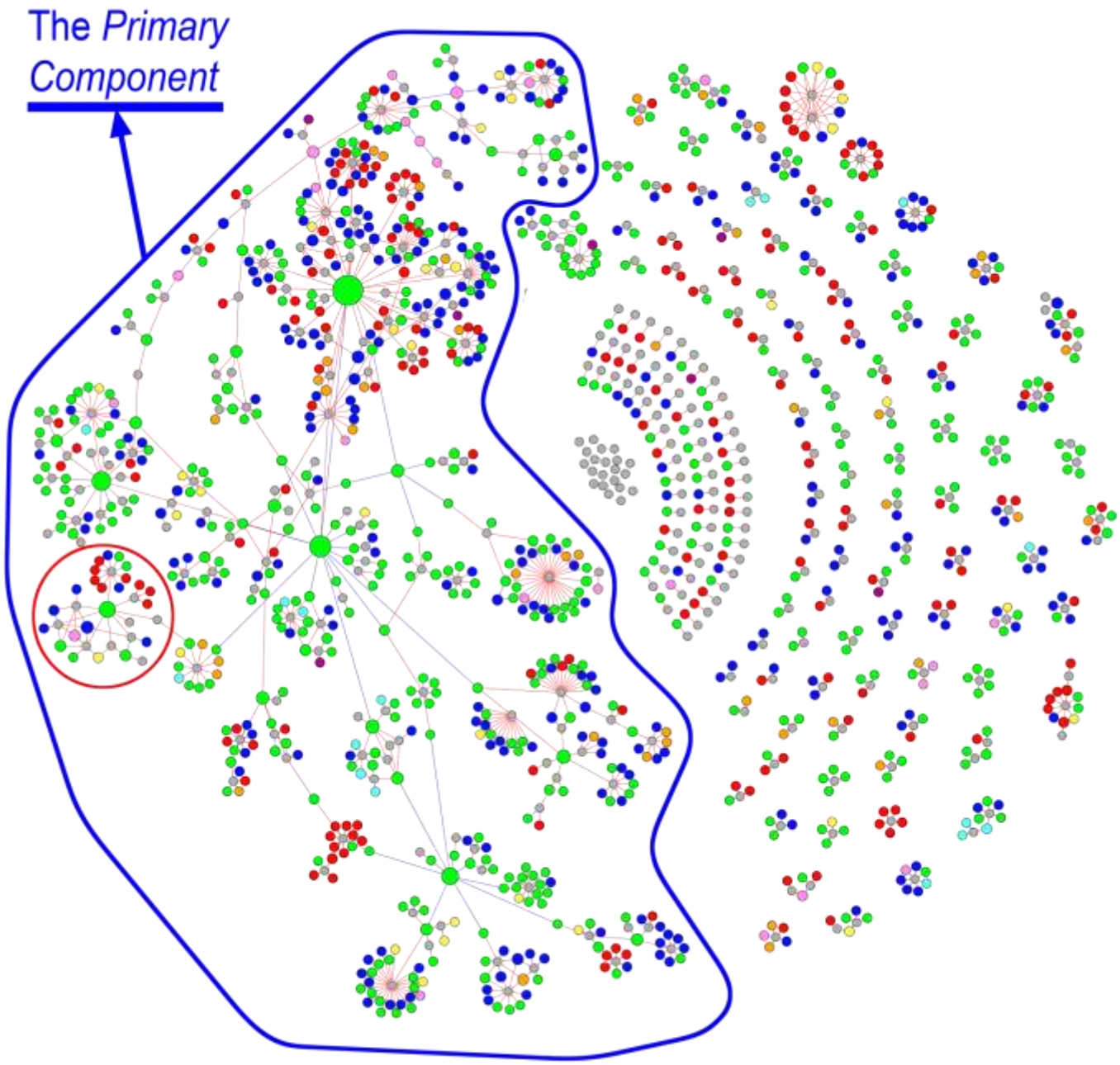


Figure 8: The mining resistance network by organisation type

Similar to the network of companies, here there are two types of links that define different relations among EJOs as well: A red link (⟶) indicates the involvement of an organisation in a particular conflict, and a blue link (⟶) indicates a direct relationship between two organisations (such as international organisations and their regional/national branches). For resistance groups, networking and making connections is a social movement strategy that is important not only to build solidarity, but also to disseminate information, mobilise resources, and share skills and experiences. Networking help local communities become better informed about the impacts of mining, and react with confidence at an early stage (Rootes, 1999a, 1999b; Schlosberg, 1999).

The mining resistance network reveals that resistance movements revolve around mainly three types of organisations: EJOs and environmental NGOs, non-environmental NGOs, and communities and residents. The green nodes (●) (representing environmental organisations) dominate the network, clearly displaying the significance of environmental organisations in the fight against the mining industry. Furthermore, the weighty presence of many other types of organisations highlights the fact that environmental and non-environmental organisations indeed cooperate well, when needed.

Yet, the number of research organisations (●) that take part in resistance movements is fewer than it might be expected. While more than one research organisation was involved in some conflicts, in the majority there was none. It seems there is room for further activists-scientists collaboration, and better use of research to generate facts and evidence. Likewise, there were only 17 legal organisations (1.56%) reported, which suggests that legal aid may be lacking in the fight against the mining industry. This gap is particularly striking as communities try to use legal tools in 43 percent of the cases, and pressures against environmental defenders, with ensuing need of legal support, occur in 29 percent of the conflicts reported, as indicated in **Table 3** above.

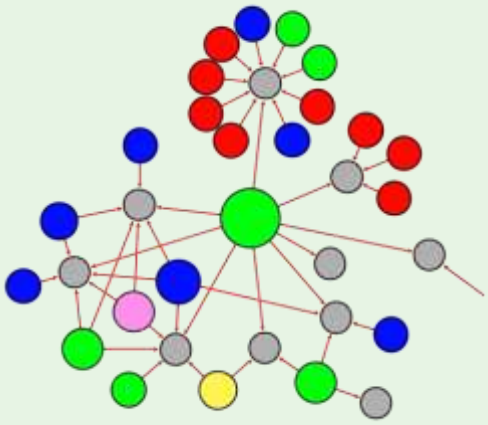
Overall, it is possible to argue that the mining resistance network at hand is strikingly much less intertwined than the network of companies depicted. There are fewer links among resisting groups and there are only a few key nodes—mostly EJOs or environmental NGOs (●)—that connect the majority of the other nodes and keep the network united. This certainly puts pressure on these key players and makes the network vulnerable to potential threats. It is presumably in this context that NGOs, for instance, as non-community organisations, have recently been attracting more and more critical attention from pro-mining groups.

The mining resistance network at hand is strikingly much less intertwined than the network of companies depicted

Moreover, as depicted in **Figure 8,** many resistance movements are outside of the network's primary component (outlined in blue), which usually happens when the only mobilised group is the community/residents (●). We call this situation the "loneliness of residents" and it clearly shows that there are still many who are isolated and unconnected in the EJ movement. **Box 2** presents a branch of the EJ network (encircled in red, in **Figure 8**) in more detail as a good example of a strong, resilient, and effective network from an organisation type perspective.

Box 2: Example of a strong solidarity network

The following branch of the EJ network, encircled in red in **Figure 8**, is a good example of a strong and resilient network from an organisation type perspective.



This branch has to two main properties:

- There is cooperation between different types of organisations. The big EJO in the middle of the network (●) connects to other EJOs, non-environmental NGOs (●), human rights organisations (●), religious organisations (●) and local communities (●).
- Organisations are collaborating on more than one conflict, which boosts the links among them. Here, for instance, the religious organisation (●) and the central EJO (●) cooperate on two conflicts, creating a strong and robust tie. Even if the central EJO was attacked and eliminated, a significant part of the network would remain intact.

This network would become even stronger with the involvement of some other types of organisations, such as research organisations or political parties.

Another way to look at the same mining resistance network would be from a multilevel perspective. The resistance network showed that almost half of the organisations reported were local organisations (49%), followed by national (44.8%) and international (6.2%) civil society organisations. These figures indicate once more that in mining conflicts, alliances are not uncommon between local resistance movements, and national and international extra-local actors.

Scale	Colour	Frequency	Percentage
Local	●	535	49
National	●	489	44.8
International	●	68	6.2
Total # of organisations		**1,092**	

Table 9:

Mobilising organisations according to their operating scales

Source: Own elaboration using EJAtlas database

Accordingly, **Figure 9** unveils this network based on the scale at which the reported groups/organisations operate: international, national or local. It explicitly shows the relationship between local environmental struggles, and national and international/transnational EJOs. In this new representation, the conflicts are again in grey (●). The international organisations are represented by red nodes (●), national organisations by blue nodes (●), and local organisations by green nodes (●).

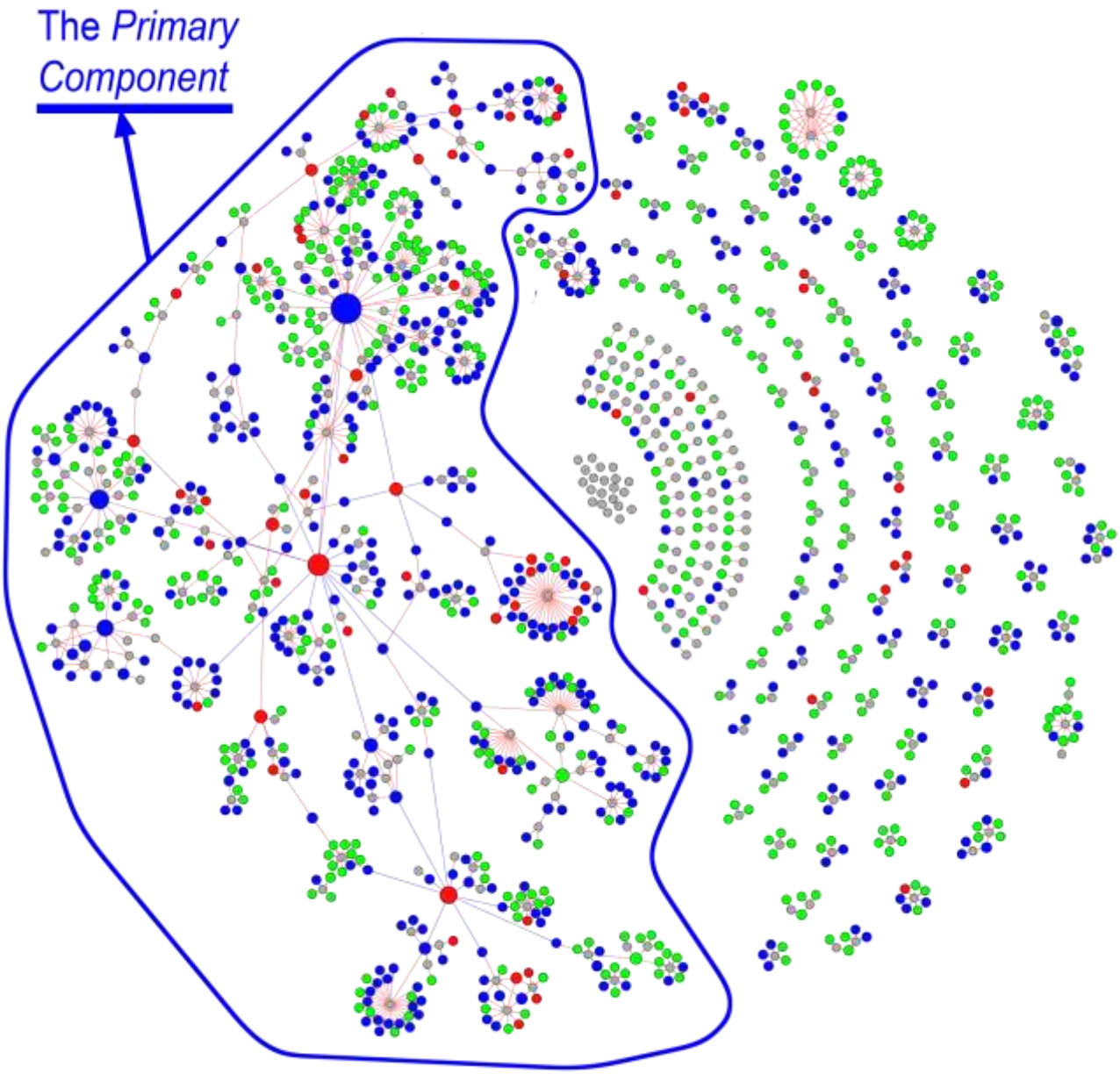


Figure 9: The mining resistance network by scale of operation

● International Organisation ● National Organisation ● Local Organisation ● Conflicts

→ Link from organisation to conflict → Link from organisation to organisation

This second representation of the mining resistance network can be seen as an approximation of the global EJ movement against mining: The primary component of the network is formed by interconnected organisations, some of them operating at different scales. There are alliances between local groups, and national and international extra-local actors. It is important to note that certain national organisations (●) here play key roles as they are like natural hubs bringing regional movements together. Then, there are some international/transnational organisations which play a prominent role in the creation of the network's primary component, by keeping the different regional/national sub-networks together.

Developing the network at multiple scales is important, because jumping scales and relating with national and international actors give local activists leverage and help them to broaden their perception (Schlosberg, 1999).This is in line with Hinojosa and Bebbington (2008), who argue that there is a strong potential for transnational coalitions among various members of civil society, but this is of course not always easy. Community outreach (i.e. creating a top-down, national-to-local link) may be difficult, considering that civil society in the developing world often lack resources. Accordingly, a bottom-up reach from communities to national EJOs heavily depends on the level of environmental consciousness in the community as well. Similarly, national EJOs may not always have the means to connect to international organisations. In such settings, professional groups (e.g. teachers, students, lawyers) may play key roles in helping local communities or national organisations raise consciousness, and carry the struggle onto a higher scale (Rootes, 1999a;1999b).

On top of building cross-scale links in this network and reaching communities, there is also the challenge of building intra-scalar links, not only among key international organisations but also among national EJOs and among local resisting groups. There have been well-known EJ-successes where communities involved in strong networks have had the ability to communicate to society as a whole the relevance of preventing mining exploration based on environmental, cultural or legal values. A celebrated one is the Wirikuta case. This seems to be associated with alliances between the local resistances and both national and international links that support them in their struggle. Still, building coalitions at the international scale is certainly politically complex considering the different backgrounds and ideals of the organisations, and may require compromises (Rootes, 2007). In this dataset, this is presumably why there is no visible direct cooperation reported between key international organisations.

To overcome the weaknesses of the current resistance network, and strengthen it from an intra-scale perspective, it is important that national hubs across countries better connect to and learn from each other

To overcome the weaknesses of the current network, and strengthen it from an intra-scale perspective, it is certainly important that national hubs (●) across countries better connect to and learn from each other. Establishing few direct links between such key hubs at national scale would enormously help to disseminate knowledge and experience in a fast and efficient manner. No doubt, local communities could further their struggle by effective networking with each other as well; for instance, by cooperating primarily within a country and linking local environmental movements one to another. This would certainly make the national hubs stronger and more effective.

Of course, it is also possible that distant communities across countries that face similar circumstances talk to each as well. Yet, considering the lack of resources, such across country local to local links should be made very strategically, based on commonalities and so-called strategic action fields (Ozen and Ozen, 2011)—for instance, in the case of resistance against the same multinational.

Considering the lack of resources, across country local to local links should be made very strategically, based on commonalities and so-called strategic action fields

Indeed, as Rootes (2007) indicates, creating a decentralised, more horizontal network with direct cooperation among national and local actors would make the global village much smaller and as Schlosberg (1999) notes, networks driven by decentralisation, diversification and democratisation have the potential to create pathways that can change the power balance in favour of local communities.

No doubt, the EJ network presented here is far from being complete, as it is based only on data that was reported by activists in relation to the mining conflicts in EJAtlas.[11] This visual representation exercise and discussion should be seen as a first step in showing the complex web of relationships among actors and resistance movements.

4.2 In which case a conflict is more intense?

In this section, we will examine the binary relations between conflict intensity (high, medium, latent, or low) and factors that relate to (1) project characteristics, (2) conflict characteristics, (3) impacts and (4) features of the resistance. In the original data, the following definitions were used as guidelines to ascertain degree of intensity:

- High (widespread, mass mobilisation, violence, arrests, etc.)
- Medium (street protests, visible mobilisation)
- Low (some local organising)
- Latent (no visible organising at the moment)

As explained above, we first conducted a chi-square test for independence among the dependent (conflict intensity) and independent variables related to project, conflict, and resistance characteristics and impacts (which were all categorical). When independence was rejected (thus a significant relationship was indicated) between the two variables, we examined the strength of the association between them, by using the odds ratio. Only relationships that revealed a significant pattern have been reported below.

The key insights gained from the analysis of bivariate associations in the data, regarding conflict intensity and other factors are as follows. Conflict intensity seems to be related in the data to:

[11] EJOs not linked to each other in this mining resistance network might well be collaborating in other resistance struggles (e.g. on water or plantations) or in some other platforms. This network just represents coalitions reported in the mining conflicts reported. It should be underlined that collaborations that are not based on specific conflicts simply do not show up here.

Conflicts are more likely to be medium-intensity when there are potential environmental impacts. High-intensity conflicts are more common when there are visible health impacts

- *Type of commodity*: High-intensity conflicts were more common in cases where the main commodity was precious metals, compared to other types of commodities (odds ratios: 1.6, 2.8, and 1.9 for precious metals against base, construction, and energy, respectively) (**Appendix 2**, **Table 2.8**). Again, this result seems to be in line with the fact that communities can take intense action to prevent environmental impact, especially if their water resources or health are in danger.
- *Impacts*: Conflicts were less likely to remain latent and more likely to be medium-intensity when there are potential environmental impacts, either immediate and/or long-term (**Appendix 2**, **Table 2.9**). In a similar vein, high-intensity conflicts were more common when there were visible health impacts, compared to low and medium-intensity conflicts (**Appendix 2**, **Table 2.10**). This comes as no surprise, as these impacts are directly related to either people's livelihoods, or more severely, their lives.
- *The level of national income:* In high income countries, medium-intensity conflicts were more common relative to other countries (**Appendix 2**, **Table 2.11**). This may be because communities suffering from or at risk of damaging projects mobilise more easily in high income countries, as they have access to knowledge and resources; yet, in developed countries, usually this does not lead to widespread violence and arrests typical of high-intensity conflicts.
- *Conflict type*: High-intensity conflicts were more likely when the issue was related to access and wastes (odds ratios: 1.41 and 1.41, respectively) (**Appendix 2**, **Table 2.12**). Again, this is expected, since conflicts related to access and waste directly concern communal livelihoods (e.g. water pollution and land dispossession) and lives (e.g., health impacts).
- *Mobilising groups*: When there are excluded/marginalised groups, high intensity conflict was more common (odds ratio: 2.52) (**Appendix 2**, **Table 2.13**). Again, this is presumably because it is easier for the government and companies to confront and put pressure on marginalised groups than others, which leads to more violence and arrests when marginalised groups keep resisting.
- *Time of mobilisation*: Medium-intensity conflicts were more common—compared to high and low-intensity conflicts—during the prevention stage, and while mobilisation for reparations (**Appendix 2**, **Table 2.14**). This is consistent with high intensity conflicts happening more in the impact stage, and low intensity conflicts (that, is communities that do not engage themselves in a strong resistance to the project) not happening because of lack of information or access to means to express the opposition.
- *Conflict events*: High-intensity conflicts were more common when conflicts were dominated by negative events (odds ratio: 0.21), and medium-intensity conflicts were more common when positive events were dominant (odds ratio: 2.93) (**Appendix 2**, **Table 2.15**). Since high-intensity conflicts by definition involve violence and arrests, which are negative events, this is

hardly surprising and could be rather be understood as a confirmation of the consistency in the dataset.

On the basis of these bivariate relationships, a multinomial (having more than two response categories) logit was used to check for multivariate relations. Explanatory variables for the multivariate regression analysis were selected among project, conflict, and resistance characteristics and impacts according to the significance of bivariate correlations. Here, the only additional variable included from outside is the eigenvector centrality variable derived from the company network. This variable measures the importance of a company's node in the network, by not only looking at the number of links the company has, but also by taking into account the importance of the other company nodes it is connecting with.[12]

The results of the logit regression is presented below, in **Table 11**. As expected, some relationships that had been captured by cross tabulations were observed to no longer be statistically significant. Robustness was also checked by adding variables to the model or removing them. Thus the results of the multivariate analysis presented in **Table 11** make it possible to pinpoint the specific characteristics of high and medium intensity conflicts. It appears that immediate potential impacts — both socioeconomic (e.g., displacement, land dispossession, lack of work security, increased violence and crime, increased corruption) and environmental (e.g., surface water pollution, water decrease, crop damage, soil contamination, air pollution, noise pollution) —are significant positive correlates of such conflicts.

This is to be expected, since any immediate impact related to land, water and security, though potential, puts people's livelihoods and daily lives at risk, leading to rapid and intense reactions. Presumably, this is also why conflicts are more likely to be of high and medium intensity during the prevention stage, according to the analysis. People mobilise and their reactions are more forceful when impacts are potentially threatening, just before a project becomes operational. Moreover, in terms of observed impacts, long-term health impacts (e.g., infectious or environment-related diseases and exposure to unknown/uncertain risks) also seem to be significant sources of high and medium intensity conflicts. Not surprisingly, when people's lives are at stake, and when impacts are not fully compensable, conflicts seem to become more intense.

Any immediate impact related to land, water and security, though potential, puts people's livelihoods and daily lives at risk, leading to rapid and intense reactions

Controlling for other factors, the relationship between potential or observed long-term socioeconomic impacts (e.g., loss of traditional knowledge/practices, loss of landscape and sense of place) and conflict intensity seems to be statistically significant, but negative. That is, conflicts that lead to long-term socioeconomic impacts are more likely to be latent and low intensity. This negative contribution is a good indicator of the difficulty to mobilise people based only on long-term effects that are relatively more difficult to visualise.

[12] A node connected to a more central node has a higher eigenvector centrality than a node connected to a less central one, even if the two have the same number of connections.

Explanatory factors	Conflict intensity high or medium (Relative to low or latent)	
Average eigenvector centrality of companies	4.29 (6.51)	
Health impact-immediate-potential	0.02 (0.20)	
Health impact-long term-potential	0.22 (0.22)	
Environmental impact-immediate-potential	0.55 (0.28)	*
Environmental impact-long term-potential	0.17 (0.24)	
Socio-economic impact-immediate-potential	0.61 (0.22)	***
Socio-economic impact-long term-potential	-0.64 (0.20)	***
Health impact-immediate-observed	-0.24 (0.22)	
Health impact-long term-observed	0.81 (0.25)	***
Environmental impact-immediate-observed	-0.09 (0.29)	
Environmental impact-long term-observed	-0.10 (0.29)	
Socio-economic impact-immediate-observed	0.19 (0.21)	
Socio-economic impact-long term-observed	-0.39 (0.21)	*
Base commodity	0.20 (0.25)	
Precious commodity	0.12 (0.23)	
Preventive	0.33 (0.20)	*
Low income	-0.21 (0.40)	
Middle-lower income	0.36 (0.32)	
Middle-higher income	-0.61 (0.27)	**
Access	0.13 (0.18)	
Waste	0.38 (0.18)	**
Negative pathways	0.16 (0.19)	
Excluded-marginalised	0.81 (0.18)	***
Economic actors	0.38 (0.22)	*
Local People	-1.33 (0.59)	**
Organisations	0.02 (0.31)	
International financial institutions	-0.06 (0.32)	
Constant	0.29 (0.60)	
Total # of cases	**344**	
Pseudo-R^2	**0.21**	

Table 11:

Multivariate analysis for conflict intensity

*, ** and *** denote significance at 10 percent, 5 percent, and 1 percent, respectively

Yet, it is also interesting to note that when economic actors and marginalised groups are involved, high and medium intensity conflicts are more likely. The presence of local people in general, however, seems to be a factor that decreases conflict intensity. This might be because it is not as easy to coordinate and mobilise high intensity action when there are many but unorganised local people and just on their own.

When economic actors and marginalised groups are involved, high and medium intensity conflicts are more likely

4.3 What makes environmental justice served?

The same type of bivariate analysis could be applied to understand the factors that are related to EJ success. Here, EJ success was defined in three categories: No, Not sure and Yes and a significant bivariate relationship was depicted with the followings:

- *Conflict intensity*: In low-intensity cases, respondents were less likely to report 'Yes' with regards to EJ success compared to high-intensity cases (odds ratio: 0.40), while a 'No' response was more likely in low intensity-cases relative to high intensity ones (odds ratio: 1.22) (**Appendix 2**, **Table 2.16**). That is, highly intense mobilisation efforts serve their purpose, as expected.
- *Project status*: In cases where a project was still operational, a 'Yes' response to EJ success was highly unlikely and a 'No' response more likely (odds ratios for stopped versus operational projects: 66.23 and 0.07, respectively) (**Appendix 2**, **Table 2.17**). Since communities presumably mobilise against a project that they consider the source of injustice, it is not surprising that they would think EJ success had not been achieved if they had been unable to stop it.
- *Presence of observed impacts*: EJ success and observed impacts appear to be related regardless of type of impact, except for long-term socio-economic impacts. When there are observed impacts, a 'No' response to EJ success was more likely (odds ratios: 3.45, 2.48, 1.33 for environmental, health, and socio-economic immediate impacts, respectively; and 3.78 and 3.53 for long-term environmental and health impacts), and a 'Yes' response was less likely (odds ratios: 0.21, 0.48, and 0.43 for environmental, health, and socio-economic immediate impacts, respectively; and 0.26 and 0.42 for long-term environmental and health impacts relative to these impacts not being observed) (**Appendix 2**, **Table 2.18**). Considering that EJ is closely linked to the unequal distribution of impacts, and that observed impacts leads to the perception that EJ was not achieved, this is to be expected. Long-term socio-economic impacts might be more difficult for people to grasp, and thus not be included in their immediate considerations.
- *Time of mobilisation*: In the prevention stage, a 'No' response to EJ success was less likely and a 'Yes' response was more likely (odds ratios relative to those already mobilised: 0.18 and 3.79, respectively) (**Appendix 2**, **Table 2.19**). On the basis of the previous findings, this finding may be explained by the fact that mobilising during the prevention stage helps to stop hazardous

projects before it is too late; especially before impacts are observed. Once impacts are felt, then it is difficult to fully achieve EJ.

- *The level of national income:* In high-income countries, a 'No' response to EJ success was less common (odds ratios: 0.08, 0.38, and 0.56 against low, lower-middle, and upper-middle income countries, respectively) and a 'Yes' response was more common (odds ratio: 8.32, 1.6, and 1.16 against low, lower-middle, and upper-middle income countries, respectively) (**Appendix 2**, **Table 2.20**).
- *Conflict events*: When positive events dominated conflicts, a 'Yes' response to EJ success was more common, and a 'No' response was less common (odds ratios: 3.85 and 0.32, respectively) (**Appendix 2**, **Table 2.21**).

Again, explanatory variables for the multivariate regression analysis were selected according to the significance of bivariate correlations. The eigenvector centrality variable depicting the importance of a company node in the company network was included in this analysis as well. Then, robustness was checked by adding variables to the model and removing them.

Significant correlates of EJ success were the centrality of the company in the network, conflict intensity, time of mobilisation, project status, presence of health and socioeconomic impacts, income level of the country, conflict events and the presence of international financial organisations.

Accordingly, controlling for other factors, the more important the company node was in the network, the less likely it was for respondents to give clear 'yes' and 'no' answers for EJ success; they were more inclined to state they were 'not sure' instead. This may be explained because when big, well-connected companies are involved in conflicts, they tend to be responsive and try to compensate some losses to keep the operation ongoing. Yet, since it is not easy to compensate for all losses, and some of them not compensable from the local communities' perspective, there is no clear decision on the perception of EJ success or failure.

In cases where a project was still operational, a 'Yes' response to EJ success was highly unlikely and a 'No' response more likely.

Mobilising during the prevention stage, and high intensity reactions, seems to make a difference in EJ success

Two significant positive determinants of EJ success are also worth noting here. Mobilising during the prevention stage, and high intensity reactions, seems to make a difference. These two factors not only increase the chances of achieving EJ, but also decrease the likelihood of EJ failure. Another key positive correlate of EJ success is the ability to halt a project. When this occurs, reports of EJ success are more likely, and reports of EJ failure are less likely. Having international financial organisations involved in a project seems to help in achieving EJ success as well, presumably because governments and companies act more responsively.

It is noteworthy that reports of EJ failure are more common in face of observed long-term health impacts. Similarly, reports of EJ success are less common when there are immediate observed socio-economic impacts. Another remarkable result is that reports of EJ failure are more likely when the national income of a country is low. In line with this finding, when negative conflicts occur in these countries, they are less likely to achieve EJ success, and more likely to result in EJ failure.

Table 12:

Multivariate analysis for environmental justice success

*, ** and *** denote significance at 10 percent, 5 percent, and 1 percent, respectively

Explanatory factors	EJ-YES (Relative to no and not sure)	EJ-NO (Relative to yes and not sure)
Average eigenvector centrality of companies	-0.11	-1.64 *
	(0.91)	(0.87)
Low or latent intensity	-0.71 ***	0.34 *
	(0.26)	(0.18)
Stopped	1.98 ***	-1.15 ***
	(0.23)	(0.22)
Health impact-immediate-observed	0.11	-0.01
	(0.25)	(0.20)
Health impact-long term-observed	-0.07	0.44 **
	(0.27)	(0.21)
Environmental impact-immediate-observed	-0.24	0.00
	(0.34)	(0.24)
Environmental impact-long term-observed	-0.12	0.30
	(0.31)	(0.24)
Socio-economic impact-immediate-observed	-0.40 *	-0.01
	(0.21)	(0.16)
Preventive	0.88 ***	-0.83 ***
	(0.25)	(0.18)
Low income	-0.42	0.82 **
	(0.61)	(0.42)
Middle-lower income	0.15	0.22
	(0.38)	(0.28)
Middle-higher income	0.08	0.12
	(0.31)	(0.23)
Negative pathways	-0.40 *	0.43 **
	(0.22)	(0.17)
International financial institutions	0.60 **	0.10
	(0.29)	(0.25)
Constant	-1.37 ***	-0.29
	(0.41)	(0.29)
Total # of cases	**346**	**346**
Pseudo-R^2	**0.46**	**0.27**

4.4 When is a disruptive project stopped?

Finally, the binary relations between the project status (proposed, planned, in construction, in operation, and stopped) and factors relating to (1) the characteristics of the project, (2) the characteristics of the conflict, (3) impacts and (4) the features of the resistance are investigated. In the data, the project status seems to be related with:

- *Time of mobilization*: Among stopped operations, we observe mobilizations to start more in preventive stage than in reaction. 39 out of 71 such case started in preventive stage versus 15 in reaction (odds ratio 2.63 for preventive stage against reaction). Similarly of those in operation only 10 started in preventive stage while more than 60 started in reaction and another 60 in mobilization stage (odds ratio 0.06) (**Appendix 2**, **Table 2.22**). This comes as no surprise since it is presumably much easier for projects to be cancelled in early stages—when mobilization start in preventive stage, and hence the project is in proposal and/or planned stage.
- *The level of national income*: There are no stopped projects in low-income countries. As expected, the picture quite different in high-income countries: being in operation is less likely in high-income countries (odds ratio of 0.34, 0.69, 1.08 against low, lower-middle, and upper-middle countries respectively) (**Appendix 2**, **Table 2.23**). This can be explained with the fact that in low-income countries, power balance is in many instances not in favour of local communities; rights in terms of environmental conservation and cultural integrity is much less recognised and there is almost no participation in decision-making on local development and the environment.
- *The conflict type (for waste and access).* Being under construction is more likely in conflict type of access (odds ratio 4.79). Being in operation is more likely in conflict type of waste (odds ratio 1.72) (**Appendix 2**, **Table 2.24**). This is consistent with the fact that access related conflicts would start in the construction stage and for waste-related conflicts there is need for operation to begin.
- *Presence of economic actors:* When the project is at proposed or planned stage, it is less common to see economic actors involved in resistance (odds ratios 0.42 and 0.69 respectively) and more common to see them when the project is under construction, in operation, and stopped. (odds ratio 2.30, 1.33 and 1.35 respectively) (**Appendix 2**, **Table 2.25**) That is economic actors such as farmers, pastoralists, fishermen, industrial workers, and trade unions mobilize and get involved into the conflict when impacts are felt and stakes are real.
- *Conflict events*: When positive events are in place, having the project stopped is more likely but in operation less likely (odds ratio 5.19 and 0.68) (**Appendix 2**, **Table 2.26**). This result is consistent with the nature of positive events; things that communities would like to see happening throughout the conflict: application of existing regulations, strengthening of participation, negotiated alternative solutions, a victorious court decision.

Economic actors such as farmers, pastoralists, fishermen, industrial workers, and trade unions mobilize and get involved into the conflict when impacts are felt and stakes are real

As in previous sections, explanatory variables for the multivariate regression analysis were selected according to the significance of bivariate correlations. The eigenvector centrality variable depicting the importance of a company node was again included in the analysis.

Explanatory factor	Stopped (Relative to others)
Average eigenvector Centrality of Companies	-36.14 ** (15.69)
Health impact-immediate-potential	-0.43 ** (0.21)
Health impact-long term-potential	0.16 (0.22)
Environmental impact-immediate-potential	0.21 (0.31)
Environmental impact-long term-potential	-0.26 (0.27)
Socio-economic impact-immediate-potential	-0.06 (0.23)
Socio-economic impact-long term-potential	0.22 (0.20)
Health impact-immediate-observed	0.24 (0.26)
Health impact-long term-observed	0.05 (0.29)
Environmental impact-immediate-observed	-0.31 (0.29)
Environmental impact-long term-observed	-0.10 (0.28)
Socio-economic impact-immediate-observed	-0.37 * (0.22)
Socio-economic impact-long term-observed	0.28 (0.23)
Base commodity	0.36 (0.24)
Precious commodity	-0.10 (0.24)
Preventive	0.35 (0.21)
Low income	μ
Middle-lower income	-0.01 (0.29)
Middle-higher income	0.13 (0.25)
Access	0.03 (0.18)
Waste	-0.07 (0.18)
Negative pathways	-0.68 *** (0.21)
Excluded-marginalised	0.09 (0.20)
Economic actors	0.16 (0.25)
Local People	0.22 (0.54)
Organisations	-0.31 (0.33)
International financial institutions	0.19 (0.33)
Constant	-0.59 (0.64)
Total # of cases	318
Pseudo-R^2	0.15

Table 13:

Multivariate analysis for projects status

*, ** and *** denote significance at 10 percent, 5 percent, and 1 percent, respectively

μ means there is no such observation in the dataset.

Unlike the other two regressions, it is not possible to distinctly pinpoint when a disruptive project will be stopped. Since all correlates obtained in the analysis were negative, we assert that the results provide insights on when projects continue rather than on when they are stopped.

Thus, projects are less likely to be stopped, for instance, when a company node in the network becomes important — a sign of well-connected and powerful firms— or when negative conflicts are present (e.g., corruption, repression of activists, criminalisation and violent targeting of activists, displacement), signalling a powerful and suppressive state.

In contrast, stopping a disruptive project seems to be related to some other factors that are not well-captured here—the institutional context and the rule of law, for instance. It is also telling that in this dataset, not a single project was reported as being stopped in low-income countries. Given that state-society relations in such countries are weak and multinational companies are mostly backed by the state, this result is hardly surprising, and appears to emphasise that state-society relations and institutional contexts matter in ensuring a project is halted.

The obtained results provide important insights in terms of definitely characterising mining conflicts as environmental justice issues. Contested mining projects around the world continue in operation in association with clear power unbalances (either political or economic ones). This calls for specific political responses to this issue, rather than remedial actions, as it is clear from the chapters above that these contested projects are also associated with different types of impacts in the communities.

5 Factors that configure the perception of environmental justice success

What makes EJ served?
How is 'EJ success' defined by activists?

This chapter explains why the resistance movement itself may view a particular result in the context of mining conflicts as an EJ success or failure. This is a delicate point that needs to combine the perceptions of activists and the communities they support, with concrete facts that can be put forward as explanations of said success or failure. With a qualitative analysis of activist responses, we aim to contribute to the definition of EJ. We are naturally aware that our starting point is essentially qualitative and includes a large component of subjectivity.

Below, the material and method used in the analysis of EJ considerations are explained first. Our results are presented next, followed by a discussion of the insights gained from the analysis; in particular, how we might contribute to the definition of EJ.

5.1 Are anti-mining struggles successful in pursuing environmental justice?

As explained in **Chapter 2**, the original data included information on assessments of whether each case was successful in pursuing EJ, asking respondents to answer 'Yes', 'Not sure' or 'No', and to explain their answers. The subjectivity inherent to self-reporting was underlined in the Introduction of this report, as well as how the same type of development (e.g. a legal decision that paralyses a mining project) can be assessed differently by the organisations involved. Our aim was to elicit response patterns that can help activists and researchers reflect on the meaning of EJ in mining conflicts.

In order to transform a wide set of reasons provided by EJOs into a set of categories that facilitate the analysis, a procedure was developed that allows recoding categorical answers on a 0-5 scale of achievements for EJ. To do so, we followed these steps:

1. Coding the reasons given as explanations for EJ success or failure in each case, for instance 'satisfactory compensation' or 'lack of legal enforcement'.
2. Classifying these reasons as 'favourable' or 'unfavourable' in terms of EJ. Based on our experience, this stage did not imply any arbitrariness since the justifications provided clearly expressed a positive or a negative appraisal of each situation. Thus, in the examples just provided, the former would be a 'favourable' reason, while the later would be an 'unfavourable' one.
3. Estimating the frequency of each reason and identify the most frequent reason(s) in the 'yes' and 'no' answers. This was done using pivot tables in MS Excel, which made it possible to tabulate the cases according to levels of success as explained in step 4**.**
4. Classifying cases according to level of EJ success using the key shown in **Figure 10**, which categorises and presents the original reports on EJ success (Yes, Not sure, No) on a 0 to 5 scale. These levels have to be understood as analytical groups expressed in an ordinal scale, where the distance between values does not correspond to the real distance between categories.

   Specifically, the classification criteria are as follows:

   Level (0): The case is considered an EJ failure (the answer is 'no'); exclusively unfavourable reasons are put forth in explanation.
   Level (1): The case is considered an EJ failure (the answer is 'no'); however, the explanation includes certain favourable factors that may soften the stated failure.
   Level (2): There is uncertainty in qualifying the case as a failure or a success (the answer is 'not sure') but most frequent reason reported in cases of EJ *failure* appears in the case. Many other reasons, favourable or unfavourable, may also appear.
   Level (3): There is uncertainty in qualifying the case as a failure or a success (the answer is 'not sure') but the most frequent reason reported in cases of EJ *success* appears in this case. Many other reasons, favourable or unfavourable, may also appear.
   Level (4): The case is considered an achievement in terms of EJ (the answer is 'yes'); however, unfavourable factors are given/mentioned/stated, which softens the positive result.
   Level (5): The case is considered an achievement in terms of EJ (the answer 'yes'); exclusively favourable reasons are put forth in explanation.

Reasons provided		Is the case a success in terms of EJ success?		
		Yes	I'm not sure	No
Favourable	The most frequent favourable reason (e.g. project was halted)	5	3	1
	Other favourable reasons			
Unfavourable	Other unfavourable reasons	4	2	0
	The most frequent unfavourable reason (e.g. project still ongoing)			

Figure 10:

Levels of EJ success in anti-mining resistance

Source: Own elaboration

What are the results of this process? **Figure 11** shows the aggregated results by indicating the percentage and number of cases both for the 'no', 'not sure' and 'yes' answer and for the different levels of success.

When activists and groups resisting in mining conflicts were asked '*Do you consider this an EJ success? Was EJ served?*', the most frequent response was 'No'. In almost half of the registered mining conflicts (46%), the answer is indeed negative. In 35 percent of all cases, there was no one single favourable element reported to serve EJ success, and these cases were unambiguously recorded as EJ failures (coded as 0).

Among the 'Not sure' responses, the most common situation (28 percent of all conflicts) was that the mining project was in operation, which in fact was identified as the most frequent reason for failure. In 5 percent of mining conflicts, the project had stopped, but uncertainty remained concerning what would happen in the long term or other reasons analysed below. Finally, around 21 percent of the mining conflicts reported were considered EJ successes, although this was on the basis of exclusively favourable considerations in only 13 percent of the cases.

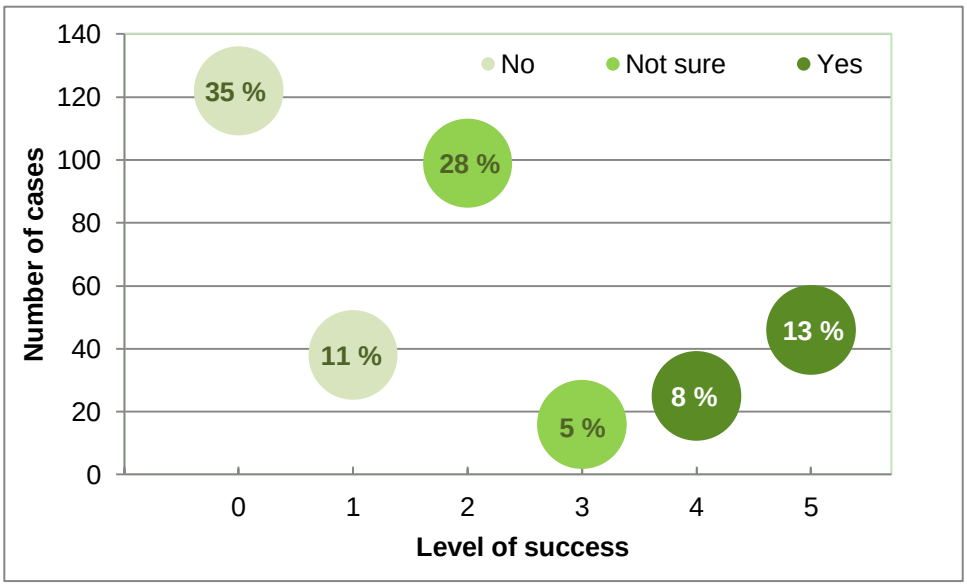


Figure 11:

Success levels in anti-mining conflicts (number and percentage of cases per level of success, N= 346)

Source: Own elaboration

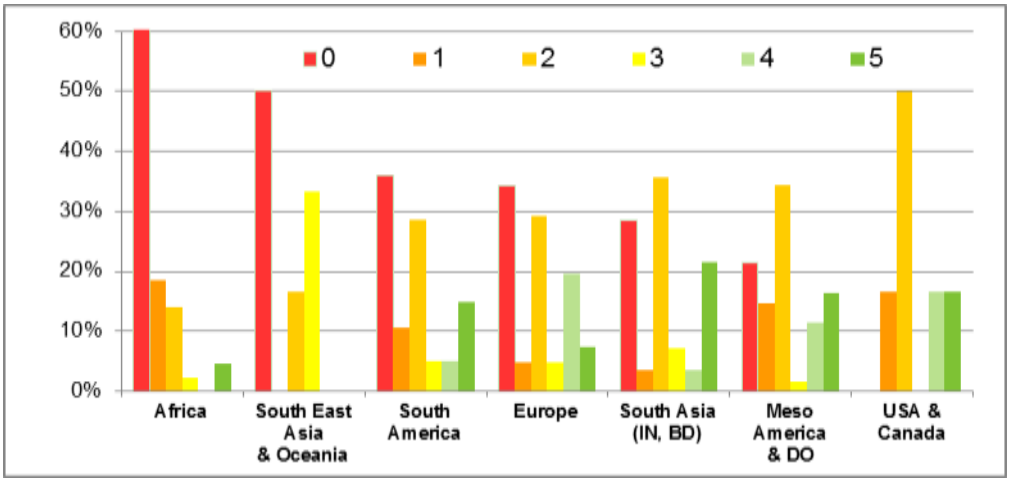
The most common perception in all regions of the world, with the exception of North America and the Asia-Pacific region, was that mining conflicts resulted in strong EJ failures, without any reasons to qualify the situation otherwise. This was most noticeable in Africa. In the case of North America, EJ failures were mostly accompanied by certain favourable conditions, and as such were recorded as Level 1; in fact, the weight of these favourable conditions even caused activists to often doubt whether it was truly a failure or a success (Level 2) (**Figure 12**).

Looking at unambiguous cases of EJ success in the Asia-Pacific region, North America, and South America and the Caribbean, reports of success were relatively more modest than reports of failure. In Europe, the weight of achievements is accompanied by unfavourable factors and thus successes were mostly recorded at Level 4.

Figure 12:

Level of perceived EJ success in different regions of the world cases in each level of success within each region)

Source: Own elaboration



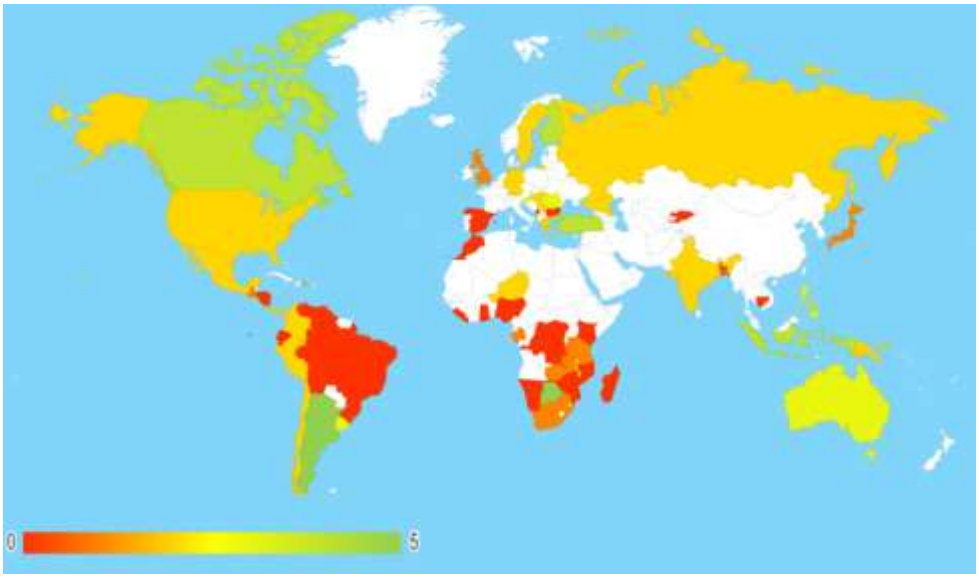
Map 2 reflects a map of intensity, which makes it possible to visualise the most common level of EJ success (statistical mode) for each country. In Brazil, for instance, the perception of total failure (Level 0) is the most common—a scenario that is repeated in Bolivia, Ecuador and many African countries, represented in red on the map.

Map 2:

Map of instensity in the level of perceived EJ success in anti-mining conflicts

Note: Mode in each country is represented, using the average mode in multi-modal cases

Source: Own elaboration



It should be noted that Argentina seems to be the exception to the rule in the context of its region, a situation that is worth exploring in the future. In Europe, North America and the Asia-Pacific region, the most reported levels of justice tend not to be at the extremes, but rather concentrated in the intermediate levels (Levels 2 and 3 on the **map 2**).

5.2 Factors that configure the perception of EJ success in anti-mining resistances

Often, the combination of favourable and unfavourable elements in each conflict makes it difficult to talk about true EJ success. Consequently, in many instances it might be more appropriate to use the term EJ 'achievement', as Pérez Rincón (2014) does for the case of environmental conflicts in Colombia. **Table 14** ranks the elements identified in the answers given to the open-ended question on attaining EJ, from the most unfavourable to the most favourable.

Factors		No (N_{no} = 160)		Not sure ($N_{not\ sure}$ = 115)		Yes (N_{yes} = 71)	
		% total	% No	% total	% Not sure	% total	% Yes
Unfavourable	Operation/construction still on-going	30	64	15	44	0.9	4
	Presence of impacts	16	34	8	22	1	7
	Inadequate government response	14	29	5	14		
	Continuing activity	7	14	4	12		
	No/insufficient/unpaid compensation	6	13	3	9	0.9	4
	Lack of legal enforcement	5	12	4	12	0.3	1
	Latency of new threats	5	12	4	11	3	14
	Criminalization and repression	5	11	2	7	0.6	3
	No actions to mitigate the impact	4	9	0.9	3		
	Lack of representation and participation / demands not met	4	8	0.9	3		
	No concrete result or no final decision yet	3	8	9	26	0.9	4
	Weak social coherence	3	7	1.4	4		
	Incompensability of impacts	3	7	2	5	0.3	1
	Efforts for expansion	1	3	1	4	0.3	1
	No cancellation	1	3	1	4		
	Another factor affecting the result not activism itself	2	4	1	4	0.3	1
	Only partially closed	0.6	1	0.9	3	0.3	1
	Other (negative)	0.3	0.6	1	3		
N.A.	Lack of sufficient information	2	4	2	5	1	4
Favourable	Other (positive)	0	1	0.3	0.9		
	Satisfactory compensation			0.3	0.9	0.6	3
	Some improvement	2	4	3	9	0.9	4
	Efforts for a national park			0.3	0.9	1	6
	Trials won	0.6	1	0.9	3	1	7
	Government support	0.3	0.6	0.6	2	2	11
	New legislation	0.3	0.6	0.3	0.9	4	18
	Networking/activism	6	13	11	32	11	52
	Project stopped/paralysed	2	5	4	12	19	92

Table 14: Reasons justifying perception of environmental justice achievement, in percentage (N_{total} = 346)

According to these data, the main factor that determines EJ success in mining conflicts seems to be whether a project is still operational or not. Sixty four percent out of all the mining conflicts that were considered EJ failures were operating or being constructed. Meanwhile, 92 percent of the cases considered an EJ success were suspended or stopped projects.

However, the project itself was not the only reason that had an effect in the perceptions of the EJ level. Factors such as the project impact were posited as a reason in 34 percent of the EJ failure cases, and inadequate governmental responses explains 29 percent of these injustices. Yet, some EJ achievements were reported even when a project was still operational. Although rare (0.9 percent of all recorded cases), this was the case in a traceable 4 percent of all EJ success stories. Factors allegedly leading to EJ achievements included consolidation of the activism networks (52 percent), favourable legislative developments (18 percent), and perceptions of governmental support (11 percent).

Factors		No	1	2	Not Sure	3	4	Yes	5	6	Total
Unfavourable	Operation / construction still on-going	103	85	18	51	51		3	3		157
	Presence of impacts	55	45	10	26	25	1	5	5		86
	Inadequate government response	47	37	10	16	16					63
	Continuing activity	23	16	7	14	13	1				37
	No/insufficient/unpaid compensation	20	17	3	10	6	4	3	3		33
	Lack of legal enforcement	19	11	8	14	14		1	1		34
	Latency of new threats	19	8	11	13	8	5	10	10		42
	Criminalization and repression	18	16	2	8	7	1	2	2		28
	No actions to mitigate the impact	15	13	2	3	3					18
	Lack of representation & participation / demands not met	13	12	1	3	3					16
	No concrete result or no final decision yet	12	6	6	31	27	2	3	3		44
	Weak social coherence	11	11		5	5					16
	Incompensability of Impacts	11	9	2	6	4	2	1	1		18
	Efforts for expansion	5	3	2	5	4	1	1	1		11
	No cancellation	4	1	3	5	5					9
	Another factor affecting the result rather than the activism Itself	6		6	5	5		1	1		12
	Only partially closed	2	2		3	1	2	1	1		6
	Other (negative)	1	1		4	4					5
N.A.	Lack of sufficient information	6	6		6	6		3	1	2	15
Favourable	Other (positive)	1		1	1		1				2
	Satisfactory compensation				1	1		2		2	3
	Some improvement	6		6	10	10		3	1	2	19
	Efforts for a national park				1	1		4	1	3	5
	Trials won	2		2	3	3		5		5	10
	Government support	1		1	2	2		8	3	5	11
	New legislation	1		1	1		1	13	2	11	15
	Networking/activism	20		20	37	30	7	37	14	23	94
	Project stopped/paralysed	8		8	14		14	65	20	45	87

Table 15: Reasons justifying perception of achieving environmental justice, absolute frequency

Looking at the most frequently reported reasons for EJ across success levels (**Table 15**) makes it possible to get the overall picture for each case more accurately. The EJ Levels 0 and 1—the lowest ranked EJ achievements—are linked to the continuation, reactivation or expansion of mining projects under various circumstances. The most frequent reasons reported were related to verified observed impacts, especially in terms of contamination and on water resources, and inadequate compensations after such impacts.

The absence of governmental responses appears to be the third most common factor that underlies EJ failure. This seems to stem both from the fact that complaints from communities did not receive proper attention, and from perceptions of support provided to companies; in a considerable number of cases (18 out of 346), it meant to put pressure on activists through criminalisation and repression strategies. Failure to comply with agreements between communities and companies, or lack of respect for the law were other often raised points regarding the lack of satisfactory institutional response to activists' demands.

An important aspect for not to report EJ success relates to the fact that even after a certain achievement has been made, the threat continues. This may be because although a project may have been halted, its impacts remain. The latency of the threat is also due to the fear that the project will be reactivated after a while. This is a particularly notable concern in the mining conflicts and might be a distinctive trait of mining conflicts in relation to other types of environmental conflicts.

Levels 2 and 3 often appear when the project is still in the planning stage; when it is early to judge the situation, or when a ceased project may potentially be reactivated. Other reasons include cases where a project has stopped, but its impacts remain; or when a project has come to a halt for reasons not related directly to the actions of resistance, but to contingencies such as a natural disaster or the breakdown/bankruptcy of the company.

Levels 4 and 5 are frequently associated with the cessation of a project. Yet, cases where a project continues may also be seen as EJ achievements if appropriate compensations were received, or if previously unfavourable situations were handled well. This happens, for instance, when project standards related to health, safety or the environment improve, or when previously violated fundamental rights are guaranteed.

Potentially, circumstances may arise that the same combination of favourable and unfavourable reasons are classified differently in EJ terms. There are many factors that influence the subjectivity of the actors (e.g., the development phase of the conflict). This analysis respects these subjectivities, while offering an explanation of EJ success and failure based on the frequency of reported factors.

Additionally, the success level can also be used as the dependent variable (0-5 scale) in a multivariate analysis as the ones presented in **Section 4.3**, for checking the factors related with EJ success. The analysis was conducted, with the same independent variables than the ones employed in **Table 12**, and very similar results were obtained (**Appendix 3**).

5.3 Contribution of these results to environmental justicedefinitions

After Schlosberg (2013, 2007), the relevance of participation in and recognition as defining factors of EJ was increasingly acknowledged. This takes the definition of EJ beyond the remarkable contributions of Bullard (2001, 1994), Agyeman et al. (2003) or Mohai and Saha (2007), among others who emphasised the disproportionate environmental loads on disadvantaged communities, generally due to reasons of race or income.

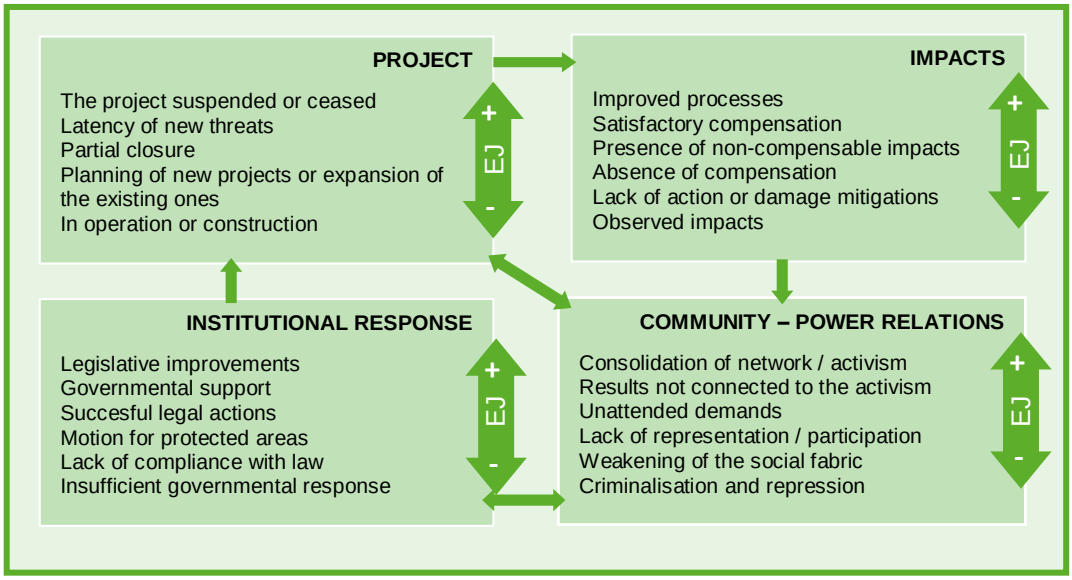
The results presented here confirmed that the key determinants of perceptions regarding EJ achievement or failure in mining conflicts were distributive aspects associated with the operation of the project, how its impacts were perceived, and whether appropriate compensations were made. Yet, the components of participation or recognition play a crucial role in EJ perceptions as well. These factors mainly relate to the unattended demands of the community, and appeared in 9 percent of the EJ failure cases. They are positively identified (albeit marginally) as a reason why the paralysation of certain projects was not considered as an EJ success. Likewise, in an outstanding 52 percent of the cases, EJ achievements were explained with visibility, positioning and the consolidation of the EJO network, or the rise of activism.

With the objective of providing elements for the conceptual development of the environmental justice concept, the factors presented in **Tables 14** and **15** were analysed according to their frequency in terms of the different levels of success. This allows grouping them around some key themes, offering an alternative view to constituents of environmental justice in mining conflicts (**Figure 13**).

Figure 13:

The keys to EJ in mining conflicts

Source: Own elaboration



The key to EJ achievement is, no doubt, the disappearance of a *project* that is perceived as the origin of the injustice. In addition to being stopped, it is also important that the project does not generate any *impacts*. The project and/ or the occurrence of impacts trigger a reaction from the community, which engage itself

in a relationship with powerful actors. The maintenance of level of social cohesion that guarantees *balanced dialogue with the main powers*, be it an economic actor (such as a mining corporation) or political one (related to the state) is another perceives key aspect of environmental justice. Then the prospects of an *institutional response* (understood here as a response by the different branches of the government) would come from the relationship between the mobilised community, and the economic or political source of power.

In each of these four key areas, every theme will be characterised by developments that can be sorted from those circumstances closest to an optimal performance of EJ to those that would be qualified as the most unjust. In **Fig. 13** this is indicated with a side arrow indicating the more just (+) and the less just (-) developments, always following the order of frequencies detected in **Tables 14** and **15**.

Thus, for instance, regarding the *project*, suspending or cessing operations would be the situation most consistent with the achievement of environmental justice, while its construction or continuing operation would be the worst possible condition. In the midst there is a gradient of increasingly unjust situations like the latency of new threats despite the project is paralysed, a closure that is only partial, planning of new projects or expansion of existing ones.

In relation to *impacts*, the least desired situation is the observation of actual impacts. Interestingly enough, the most desired situation in this theme is not the compensation of impacts, although undoubtedly this ranks high, but rather the improvement in processes that would prevent impacts in the first place even if the project is on-going.

A single factor *per se* is not capable of determining whether a situation is environmentally just or unjust in a mining conflict.
A balance of four different areas is needed: the performance of the project, its impacts, the community-power relationships and the institutional response to people's claims

In the *community-power relations,* there is an important gap between the only development considered to be favourable (the consolidation of local networks and activism) and the rest of the factors, which are all unfavourable.

Finally, the *institutional response* ranges from the most positive factors like legislative improvements or governmental support for the community to the most negative ones, such as the lack of law enforcement or a governmental response that is regarded as simply insufficient. In general, the unveiling of this theme as a crucial one is a call of attention for redressing the role of state power in cases of environmental injustice. On the one hand, the communities address their claims to the government seeking justice in face of external pressure. On the other hand, the residents claim grievance when they receive harm from the power that is supposed to protect them.

All in all, the conceptual framework here presented serves to explain that no factor is capable of determining *per se* whether a situation is environmentally just. Instead, the perception of environmental justice arises from a balance in these four different areas.

6
Looking forward– key insights

The aim of this report was to bring together past EJO experiences of resistance against mining, and present evidence-based support for successful EJ activism. The report is rich in empirical terms and the analyses described in the preceding chapters—based on multivariate analysis, social network analysis and qualitative research—offer key insights on the current state of local and global resistance against mining, and how EJ outcomes can be improved. While the 346 cases studied in this report are just a small part of the thousands of mining conflicts around the world, the dataset was comprehensive enough to represent the claims of EJOs active in mining conflicts and unveil some key patterns across cases and continents. To the authors' best knowledge, this is the first study of its kind to be offered to activists organisations in order to support their work of environmental defence.

No doubt, the debates around mining resonate in other anti-extractivist controversies, for instance, in oil or biomass conflicts as well. The story of mining conflicts is in many ways representative of challenges experienced by EJ movements as a whole. These final pages of the repport are devoted to summarised the main aspects from mining conflicts that have been unveiled from the research done until now.

Mining activities result in numerous environmental injustices—at local and global levels

Several results, mostly coming from the quantitative analysis, prove that mining activities result in numerous environmental injustices at local and global levels. The fact that similar patterns in terms of perception of injustice can be found in areas geographically dispersed, but often connected through corporate or activist networks reinforces the idea that mining conflicts are a keystone of global environmental injustice. Some facts in support of this claim are that:

- A great majority of the mining conflicts occur in rural areas and reported impacts encompass both ecological and socioeconomic damages that threaten local people's livelihoods on a daily basis, including adverse

health effects and cultural losses. Meanwhile, most of the firms central to the company network (i.e., involved in many conflicts) are well-known big international companies.

- In this context, EJ failure perception is very widespread. When asked whether EJ was served, respondents said 'Yes' in only one out of five cases, proving how unjust the current situation is from an EJ perspective at local level.
- Mining developments clearly lead to distributive injustices at the global scale as well. The quantitative analysis revealed that observable environmental and health impacts are more common in low income countries, and less common in high income nations. Is the 'Lawrence Summers' Principle'[13] —which promotes dumping toxic waste in the Third World for economic reasons—purposely applied? This situation has direct implications for global EJ discussions, since the quantitative results also showed that EJ success is less likely to be reported once impacts, some of which are uncompensable, are observed.
- From a global EJ perspective, it is also very telling that reports of EJ failure were more likely in low income countries, where not a single project was stopped as a result of resistance movements. The qualitative analysis signals that other factors presumably come to the fore in such cases, such as state ideology, corruption, lack of government support and rule of law. This also explains why in cases where the projects cannot be stopped, conflicts still remain latent.

In response, communities take intense action, in particular, to prevent immediate impacts

In mining conflicts, medium and high intensity conflicts are quite common, almost 75 percent of mining conflicts reported in the dataset. Which kinds of factors come associated with higher conflict intensity?

- Communities gets mobilised in an intense manner especially when impacts of socio-economic and environmental type are immediate and potentially threatening their daily lives, for instance, if their water resources or land were at risk. Long-term observed health impacts, like infectious diseases, also seem to be significant sources of high and medium intensity conflicts.
- In contrast, long-term socioeconomic impacts that are harder to envision—such as loss of traditional knowledge—do not seem to be an important factor in mobilising people. Informing the public about these

[13] For a definition, look at the EJOLT glossary (www.ejolt.org/section/resources/glossary) or find and elaboration of the concept in the EJOLT Report 1 (Demaria et al., 2012).

types of impacts might enable people to engage with their own life conditions more.

- While highly intense mobilisation efforts seemed to make a difference in EJ outcomes, it is important to initiate mobilisation efforts during the prevention stage, before the operation starts, so as to increase the chances of stopping the project.

Still, there is need to strengthen resistance synergies …

The network analysis revealed that mobilisation efforts against mining have spread worldwide. While local communities are the key actors in all efforts against mining, environmental organisations also play an important role in standing up to the mining industry; they connect the various actors and keep the network intact. There is, however, a need to bolster the ties among the different locations that give rise to a synergistic effect, leading to successful resistance and better EJ outcomes.

- The network of companies is quite strong; big companies are well-connected not only among themselves but also to other national firms. In contrast, the mining resistance network is much less intertwined, and sometimes local communities are left alone in their fight against mining. The resistance movements against mining should be strengthened in several ways.
- To build a stronger network, it is crucial for organisations from diverse backgrounds—for instance, environmental and non-environmental civil society organisations, research centres, political parties and legal organisations—to cooperate more at the local level. Legal support seems to be a key area where EJOs and communities need assistance in particular and would benefit from cooperation.
- Although alliances are not uncommon between local resistance movements and extra-local actors, it is also important for the network to develop further at multiple scales. Today, certain national organisations seem to play key intermediary roles in carrying local struggles onto a higher scale, acting as natural hubs that bring regional and local movements together and connect them to international organisations. Consequently, it appears vital for all localised resistance movements to aim and build links at the national level.
- In addition to networking across scales, there is need to build intra-scalar links among national EJOs. Establishing a number of direct links between certain key national hubs across countries would be an enormous help in swiftly and efficiently disseminating knowledge and knowhow on local mining resistance movements.

- Local resistance movements could also cooperate and share knowledge and knowhow, but given the lack of resources, this should perhaps be undertaken when strategic action is necessary; for instance, when fighting against the same mining company.

And progress towards environmental justice requires serious action from governments and companies in several key areas

This report through the quantitative and qualitative analysis pointed out four key areas that shape how EJ is perceived in mining conflicts: the project, its impacts, community-society relations, and institutional responses. From a policymaking perspective, there is plenty of room for improvement if governments and mining companies wish to take EJ seriously; to do so, however, they first need to address problems in these four areas, one by one and take serious action for each.

- On the path to EJ success, the most difficult challenge that mining resistance movements face might be to stop a project (in construction and operation stages) from being implemented in the first place. This is certanly the key for a transformative politics of environmental justice, and necessarily entails questioning top-down development practices imposed on local territories, and requires instead a call to discuss the kind of development that local communities desire. Contested mining projects around the world continue in operation in association with clear power unbalances (either political or economic ones). This calls for specific political responses to this issue, rather that remedial actions.
- Having international financial organisations involved in a project seems to help in achieving EJ success as well, presumably because governments and companies act more responsively.
- If stopping a project is not possible, then it is important to at least ensure that its operations are improved so that it does not to become a threat to local people's lives and livelihoods in the first place. In many instances, impacts are not compensable given their very nature. Moreover, compensating for impacts does not necessarily solve the problem of EJ in other dimensions, for instance, regarding the community-society relations and institutional responses.
- The community's relationship with the state and mining companies is apparently crucial in EJ achievements as well. One source of injustice seems to be lack of representation in the decision-making processes and weak institutional response in case of appeals. The consolidation of local networks might be an important factor that would enforce the state and companies to recognise resisting communities as equal and legitimate partners in the decision-making processes.

- The institutional response is another crucial dimension of EJ. If states and companies are to take EJ seriously, the legislative setting for mining activities should be reconsidered regarding the whole process of planning, operating and closing a mine.

All in all, these results clearly illustrate the need to hold a global discussion on EJ and mining, which must involve governmental and non-governmental actors. It is also necessary to break the mediating silence regarding the social and environmental impacts of large-scale mining sites. The discussion should focus particularly on the role of metals and other minerals as non-renewable resources, which would ideally be regulated through policies geared not to private gains, but to public benefit. Only then can the use of minerals be weighed against the territorial, social and environmental sacrifices that the mining industry imposes on many regions of the world. This process would naturally require looking at the central nodes of the economy—from both the production, and the consumption side.

It is hoped that the key insights gained from this study will be useful for activists in different fields, and feed into debates on what can be done to strengthen EJ movements in general. Many of the obtained results can also be directly used by policymakers, to improve their practices from an EJ perspective. Although the ideas summarised here shed new light on comprehending the determinants and constituents of mining-related environmental injustices, they are merely a first analytic step. Other researchers and scholars should definitely take the findings and discussions in this report as a baseline for further research into the many aspects of mining conflicts that still need clarification.

Acknowledgments

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Appendices

Appendix 1:

List of mining conflicts from EJAtlas (346 cases)

ID	Label	Conflict Name	In Degree
10001	Talabira	Talabira Coal Mine Expansion, India	3
10002	Famatina	Famatina Gold mining, Argentina	4
10003	Pascua Lama, Argentina	Pascua Lama Mine, Argentina	3
10004	Cerro Rico	Potosi Mines of Cerro Rico, Bolivia	3
10005	El Cerrejon	El Cerrejón mine, Colombia	4
10006	Kori Kollo	Kori Kollo mine, Bolivia	3
10007	Diamond Ext-Kalahari	Diamond Extraction in the Central Kalahari Game Reserve, Botswana	6
10008	Pascua Lama, Chile	Pascua Lama Mine, Chile	2
10009	Congo Coltan in the Kivu	Congo Coltan in the Kivu Region, DR of Congo	6
10010	RBM dune mining	Richards Bay Minerals dune mining, South Africa	2
10011	Carbozulia Mines	Carbozulia Mines, Venezuela	1
10012	Pondoland Wild Coast Xolobeni	Pondoland Wild Coast Xolobeni mining threat, South Africa	3
10013	Yanacocha	Yanacocha Mine, Peru	4
10014	Kwale District	Titanium Mining in the Kwale District, Kenya	3
10015	Mtunzini - Exxaro	Mtunzini - Exxaro proposed sand mining, South Africa	2
10016	Asana	Copper mining on the Asana river, Peru	2
10017	Quimsacocha	Iamgold in Quimsacocha, Ecuador	3
10018	RTZ in Molleturo	Rio Tinto Zinc in Molleturo, Ecuador	1
10019	IMC in Molleturo	International Minerals Corporation (IMC) in Molleturo, Ecuador	2
10020	Shuar	Lowell mining company in Shuar territory, Ecuador	3
10021	Esquel	Esquel, Meridian Gold Mine, Argentina	1
10022	Podocarpus	Podocarpus National Park and mining, Ecuador	3
10023	Ida Mountain	Ida Mountain (Kazdagi) Prospecting for Gold, Turkey	1
10024	Intag	Intag mining, Junin, Ecuador	4
10025	Rio Blanco Mine	Rio Blanco Mine Majaz, Peru	3
10026	Yanomami	Gold Mining in indigenous Yanomami territory, Brazil	1
10027	Anti-asbestos Campaign	Anti-asbestos Campaign, Australia	2
10028	Yozgat	Yozgat Uranium Mine Project, Turkey	2
10029	Kusum Tola	Kusum Tola, India	1
10030	Vale mines	Vale mines displace farmers, Mozambique	2
10031	Ambatovy	Ambatovy Mining Project, Madagascar	4
10032	RT-QMM/Ilmenite	Rio Tinto/QMM Ilmenite Mine, Madagascar	3
10033	Analanjirofo	Mainland Mine Analanjirofo, Madagascar	1
10034	Bom Jesus da Serra	Abestos Mine in Bom Jesus da Serra and Eternit Factory in Simoes Filho, Brazil	2
10035	Metalleia STOP	Metalleia STOP against gold mining in Kilkis, Greece	2
10036	Bergama	Bergama Gold Mine, Turkey	4
10037	Caldag	Caldag Nickel Mine, Turkey	2
10038	Juma river	Conflict involving miners of Juma river, Novo Aripuana/AM, Brazil	1
10039	Mopani	Mopani Copper Mine, Zambia	2
10040	North Mara	Barrick Gold North Mara Gold Mine, Tanzania	2
10041	Western Shoshone	Western Shoshone tribes Barrick Gold lawsuit, USA	1
10042	Chirano	Chirano Gold Mines compensation struggle, Ghana	1
10043	Ok Tedi	Ok Tedi copper mine, Papua New Guinea	1
10044	Istranca	Istranca/Yildiz Mountains Mines and Quarries, Turkey	6
10045	Eti Silver Cyanide Mine	Eti Silver Cyanide Mine, Turkey	1
10046	Ozbek viilage	Ozbek Village Stone Quarry Construction, Turkey	1
10047	Kisladag	Kisladag Gold Mine, Turkey	1
10048	Santo Amaro	Lead contamination in Santo Amaro, Bahia, Brazil	4
10049	Juruti	Bauxite mining in Juruti, Para, Brazil	2
10050	Oriximina	Bauxite mining and deforestation in Oriximina (Para), Brazil	8
10051	Onca Puma	Onca Puma nickel mining project in Ourilandia do Norte, Para, Brazil	2
10052	Quilombo-Moju	Kaolin pipeline on Quilombo land in Moju, Para, Brazil	3
10053	Cinta Larg	Conflict between Indians and miners in the Cinta Larga lands in Rondonia, Brazil	1
10054	Anitpolis	Phosphate mining in Anitpolis, Brazil	7
10055	Uranium mining, Gabon	Uranium mining pollution and health threats, Gabon	4
10056	Imouraren	Areva Uranium mining in Imouraren, Niger	7
10057	Koidu	Koidu diamond mining conflict, Sierra Leone	3
10058	Paracatu	Gold mining in Paracatu, Minas Gerais, Brazil	3
10059	ArcelorMittals in Liberia	ArcelorMittals iron ore mining, Liberia	1
10060	Uranium mine Pecs	Uranium mine reopening in Pecs, Hungary	4

ID	Label	Conflict Name	In Degree
10061	Kolontar-Devecser	Redmud disaster Kolontar-Devecser, Hungary	1
10062	Conceicao do Mato Dentro	Impacts of iron ore mining in Conceicao do Mato Dentro/MG, Brazil	1
10063	Kayerekera	Kayerekera Uranium Extraction, Malawi	2
10064	Bafokeng	Bafokeng Platinum mine, South Africa	4
10065	Asbestos legacy, South Africa	Asbestos legacy, South Africa	3
10066	Witwatersrand	Acid Mine Drainage, South Africa	3
10067	Lonco mine projects, Argentina	Lonco mine projects, Argentina	1
10068	Marange Diamond II	Marange diamond mines pollute rivers, Zimbabwe	4
10069	DTZ OZGEO Gold Penhalonga	DTZ OZGEO Gold Penhalonga, Zimbabwe	3
10070	Black Granite Mutoko	Black Granite Mutoko, Zimbabwe	4
10071	Chimanimani Diamond Mining	Chimanimani Diamond Mining, Zimbabwe	3
10072	Great Dyke Area	Chrome-rich Great Dyke Area, Zimbabwe	2
10073	Marange Diamond I	Marange Diamond Land and Human Rights abuses, Zimbabwe	4
10074	Gold Panning in Kwekwe	Gold Panning in Kwekwe, Zimbabwe	1
10075	Niyamgiri-Vedanta	Niyamgiri-Vedanta Bauxite Mining, India	1
10076	Buhovo	Life after the uranium mines in Buhovo, Bulgaria	1
10077	Panguna	Rio Tintos lawsuit, Papua New Guinea	2
10078	Caetite	Uranium mining in Caetite, Brazil	1
10079	Ada Tepe	Ada Tepe Gold Mine, Bulgaria	2
10080	Phulbari	Open-cast coal mine, Phulbari, Bangladesh	1
10081	Proyecto Andacollo	Proyecto Andacollo, Neuquen, Argentina	2
10082	Campana Mahuida, Argentina	Campana Mahuida, Argentina	1
10083	Omai	Omai gold mine tailings dam, Guyana	3
10084	Mogalakwena	Anglo Platinum Mogalakwena mine lawsuit, South Africa	2
10085	Bajo la Alumbrera	Bajo la Alumbrera mine, Argentina	5
10086	Calcatreu	Calcatreu, Rio Negro, Argentina	2
10087	Proyecto de Exeter	General Alvear suspende proyecto de Exeter (Mendoza), Argentina	3
10088	Lomada de Leiva	Lomada de Leiva, Argentina	5
10089	Manantial Espejo	Manantial Espejo open cast mine, Argentina	2
10090	Humahuaca	Minera Aguilar amenaza Humahuaca, Argentina	2
10091	Navidad	Navidad, Chubut, Argentina	2
10092	Ninu	Ninu mine, Mendoza, Argentina	1
10093	Pachon	Pachon (Argentina-Chile)	4
10094	Papagayos	Papagayos, Mendoza, Argentina	2
10095	Jujuy	Pirquitas amenaza aguas de Jujuy, Argentina	2
10096	Litio	Salar del Hombre Muerto - Litio (Argentina)	3
10097	Rio Colorado	Rio Colorado - Potasio (Mendoza, Argentina)	3
10098	San Jorge	San Jorge amenaza Uspallata, Mendoza, Argentina	2
10099	San Jose	San Jose Huevos Verdes (Argentina)	4
10100	Sierra de la Ventana	Sierra de la Ventana, Argentina	0
10101	Paredones Amarillos	Paredones Amarillos/Mina Concordia/Los Cardones, México	3
10102	Coro coro-Hidrometalurgica	Coro coro - Hidrometalurgica	2
10103	Huanuni	Huanuni, Bolivia	1
10104	Rio Desaguadero	Inti Raymi contamina Rio Desaguadero, Oruro (Bolivia)	2
10105	San Bartolome	Potosí (San Bartolomé), estabilidad geologica del Cerro Rico, Patrimonio de la Humanidad, Bolivia	2
10106	San Cristobal	San Cristobal (Potosi, Bolivia), reubicacion	2
10107	Vista Gold en Amayapampa	Amayapampa y Capasirca, masacre, Bolivia	3
10108	Carmen de Andacollo	Carmen de Andacollo - Andacollo Gold, Chile	2
10109	Caserones	Caserones, Chile	4
10110	Cerro Casale	Cerro Casale / Aldebaran, Chile	2
10111	Cerro Colorado	Cerro Colorado, Chile	2
10112	Bahia de Chanaral	Division Salvador - Bahia de Chañaral	1
10113	Collahuasi	Doña Inés de Collahuasi, Chile	2
10114	Dunas de Putu	Dunas de Putú, Chile	2
10115	Guafo	Guafo - Minas de Carbón, Chile	1
10116	Isla Riesco - Carbon	Isla Riesco - Coal extraction, Chile	2
10117	Lago Lleu lleu	Lago Lleu lleu, Chile	1
10118	Lauca y Las Vicunas	Lauca (Parque Nacional) y Las Vicuñas (Reserva Nacional), Chile	7
10119	Los Pelambres	Los Pelambres, comunidad Los Caimanes, Chile	3
10120	Los Pingos	Los Pingos, Tulahuén, Chile	2
10121	Pampa Colorada	Pampa Colorada - Minera Escondida	4
10122	Quebrada Blanca	Quebrada Blanca, Tarapaca, Chile	1
10123	Quillagua-Chuquicamata	Quillagua - Chuquicamata, Chile	1
10124	Tres Valles	Tres Valles, Coquimbo, Chile	2
10125	Valle de Elqui	Valle de Elqui - Teck, Pan Pacific	2
10126	Caramanta	Caramanta, Antioquia, Colombia	5

ID	Label	Conflict Name	In Degree
10127	Cerro La Jacoba	Cerro La Jacoba, Colombia	1
10128	Cerro Matoso	Cerro Matoso, Colombia	2
10129	Cienaga de Ayapel	Cienaga de Ayapel, Colombia	0
10130	Desviacion Rio Rancheria	Desviación Río Ranchería, La Guajira, Colombia	4
10131	Santa Marta	Drummond Company vs. Hoteles turisticos Bahia de Santa Marta, Colombia	2
10132	Quindio	Exploracion de oro y otros minerales en Quindio, Colombia	6
10133	Coltan Parque Nacional Puinawai	Coltan Parque Nacional Puinawai, Colombia	4
10134	Jerico	Jericó, Antioquia, Colombia	1
10135	La Colosa	La Colosa, Colombia	1
10136	La Jagua de Ibirico	La Jagua de Ibirico (Cesar) vs. Drummond, Colombia	8
10137	Landazuri	Landázuri, Santander, Colombia	3
10138	Macizo Colombiano	Mining in Macizo Colombiano, Colombia	2
10139	Marmato	Marmato mines, Colombia	4
10140	Santander de Quilichao	Mineria Ilegal Santander de Quilichao, Colombia	0
10141	Jamundi	Mineria ilegal, Jamundí, Colombia	0
10142	Almorzadero	Paramo El Almorzadero, Colombia	3
10143	Paramo Rabanal	Paramo Rabanal, Colombia	2
10144	Gramalote	Proyecto Gramalote, Antioquia, Colombia	2
10145	La Vega-Mocoa	Proyecto La Vega-Mocoa, Colombia	2
10146	Proyecto Mande Norte	Proyecto Mandé Norte, Murindó, Colombia	3
10147	Quebrada la Lata	Quebrada la Lata, Magdalena, Colombia	2
10148	Quinchia	Quinchía, Risaralda, Colombia	4
10149	Rio Dagua	Rio Dagua gold mining, Zaragoza, Colombia	0
10150	Rio Guabas	Rio Guabas, Valle del Cauca, Colombia	1
10151	Rio Tunjuelo	Río Tunjuelo, Bogotá, Colombia	3
10152	San Lucas	Serranía de San Lucas gold mining, Colombia	1
10153	Suarez, Cauca	Suárez, Cauca, Colombia	2
10154	Tabio-Rio Frio	Tabio - Rio Frio mining activities, Colombia	2
10155	Uranio Samana	Uranio Samaná, Caldas, Colombia	2
10156	Bellavista - Miramar	Bellavista - Miramar (Costa Rica)	3
10157	Bribri	Bribri, mineria (Costa Rica)	3
10158	Crucitas	Crucitas, Costa Rica	1
10159	Curipamba Sur	Curipamba Sur, Bolivar, Ecuador	3
10160	Fruta del Norte	Fruta del Norte, Ecuador	2
10161	Mirador	Mirador, Cordillera del Condor, Ecuador	2
10162	Panantza - San Carlos	Panantza - San Carlos, Ecuador	4
10163	El Dorado	El Dorado, El Salvador	5
10164	San Juan Sacatepequez	Cementos Progreso - San Juan Sacatepéquez, Guatemala	3
10165	Cerro Blanco	Cerro Blanco, Guatemala	2
10166	Fenix	Fenix, El Estor, Guatemala	4
10167	San Andres-Copan	San Andres - Copan (Honduras)	4
10168	Santa Barbara	Santa Barbara, Honduras	3
10169	Valle de Siria	Valle de Siria , Honduras	3
10170	Cananea	Cananea mine, Mexico	2
10171	Capulalpam de Mendez contra Natividad	Capulalpam de Mendez contra Natividad, Oaxaca	2
10172	Chicomuselo	Chicomuselo contra Blackfire, Chiapas	1
10173	Cocula	Cocula, Guerrero, Mexico	2
10174	Huizopa	Dolores (Minefinders) usurpa tierras en Huizopa, Chihuahua	1
10175	Guanajuato	Guanajuato, presas contaminadas por minera Great Panther (El Rosario), Mexico	2
10176	Pasta de Conchos	Pasta de Conchos - mine disaster (Mexico)	2
10177	San Jose del Progreso	San Jose del Progreso, Oaxaca, Mexico	2
10178	La Libertad	Rio Mico contaminado por mina La Libertad, Nicaragua	2
10179	Cerro Quema	Cerro Quema, Panama	2
10180	Cerro Chorca	Ngöbe-Buglé against Mining (Panama)	1
10181	Petaquilla	Petaquilla, Panama	6
10182	Sona	Soná, Panama	1
10183	Afrodita-Dorato	Afrodita-Dorato, Condorcanqui, Peru	4
10184	Alto Chicama	Alto Chicama, Peru	2
10185	Antamina	Antamina mine, Peru	5
10186	Antapite Huancavelica	Antapite Huancavelica, Peru	2
10187	Bayovar	Bayovar (Vale - Miski Mayo), Peru	5
10188	Canariaco Norte	Canariaco Norte - San Juan de Kanaris, Peru	2
10189	Cerro Verde	Cerro Verde - Arequipa, Peru	4
10190	Chumbivilcas	Chumbivilcas, Peru	3
10191	Colquijirca	Colquijirca, El Brocal, Perú	2
10192	Conga	Conga	3
10193	Cuajone-Toquepala	Cuajone-Toquepala, Ilo, Peru	2
10194	La Morada	La Morada - Miski Mayo, Peru	2
10195	Toromocho	Morococha (displacement), Toromocho project, Perú	1
10196	Pierina	Pierina, Jangas, Perú	2
10197	Quellaveco	Quellaveco, Peru	1

ID	Label	Conflict Name	In Degree
10198	San Mateo de Huanchor	San Mateo de Huanchor, Perú	9
10199	Reque	Reque - Planta de lixiviación de La Granja, Perú	2
10200	Ronderos de Pulan	Ronderos de Pulán contra minera la Zanja, Perú	2
10201	Shougang	Shougang, Marcona, Perú	1
10202	Tia Maria	Tia Maria, Peru	2
10203	Tintaya	Tintaya, Espinar, Perú	1
10204	Los Haitises	Cementera en Los Haitises, República Dominicana	1
10205	Cotui	Cotui contra Pueblo Viejo/Barrick Gold, Dominican Republic	3
10206	Minera San Rafael	Minera San Rafael - El Valle - Dominican Republic	1
10207	Uruguay - no mineria de hierro	Uruguay - no mineria de hierro	1
10208	Cape/Gencors asbestos	Cape/Gencors asbestos mining & milling activity, South Africa	2
10209	Panem Coal Mines	Panem Coal Mines, India	2
10210	Marlapadu	Mining Project at Marlapadu village, India	2
10211	Loba Village	Loba Village Open Cast Mining, India	2
10212	Paderu	Bauxite Mining in Paderu, Visakhapatnam, India	3
10213	Tata Steel Plant	Tata Steel Plant Kalinganagar, Orissa India	1
10214	Severstals steel plant	Severstals steel plant, Russia	1
10215	Amungme	Amungme against Freeport-McMoRan, Indonesia	3
10216	Karonga	Paladin Africa uranium mine Karonga, Malawi	2
10217	Gandarela	Gandarela Mountain Range (Minas Gerais), against mining iron	1
10218	Sierra de La Laguna	Mina Sierra de La Laguna	1
10219	Rio Yaqui	Minerales Libertad contaminates Rio Yaqui	1
10220	Mountaintop Coal Mining	Mountaintop Removal Coal Mining in Laciana Valley, Spain	1
10221	Exxaro Leeuwpan	Exxaro Leeuwpan Mining Project, South Africa	1
10222	Agadez	Areva Uranium Mines in Agadez, Niger	1
10223	Jaypee Cement Plant	Jaypee Cement Plant, India	1
10224	Baix Camp	Quarries and Land Overexploitation in the Baix Camp region, Catalonia, Spain	2
10225	Fish Lake	New Prosperity Goldmine Fish Lake, BC, Canada	1
10226	Meghalaya	Uranium Mining in Meghalaya, India	1
10227	Rosia Montana	Rosia Montana, Romania	6
10228	Mulanje Massif	Mulanje Massif Rare Earth Mineral Exploration, Malawi	4
10229	Corumba	Corumba indigenous communities and mining, Brazil	10
10230	Capao Xavier	Capão Xavier mine, Brazil	2
10231	Santa Catarina	Coal mining pollution, Santa Catarina, Brazil.	1
10232	Salonit Anhovo	Asbestos in Salonit Anhovo, Slovenia	1
10233	Mezica valley	Mezica valley lead contamination	1
10234	Sponge Iron Factories	Sponge Iron Factories in West Bengal, India	0
10235	Nirma Cement Plant	Mahuva Movement against proposed Nirma Cement Plant, India	1
10236	Odisha	Sponge Iron Plants in Odisha, India	28
10237	Corcoesto	Gold mining in Corcoesto, Galicia, Spain	2
10238	El barzon vs. MagSilver	El Barzon vs. MagSilver (Cascabel), Chihuahua, Mexico	2
10239	Tahltan Nation	Tahltan Nation v. Fortune Minerals, BC, Canada	3
10240	Vedanta and Konkola	Vedanta and Konkola, Zambia	2
10241	Angangueo	Angangueo community vs Grupo Mexico, Michoacan	2
10242	Magdalena Teitipac vs Linear Gold	Defence of Magdalena Teititipac against gold mining , Mexico	2
10243	Birbhum Coalfield	Deocha-Pachami-Dewanganj-Harinsingha, Birbhum Coalfield, India	2
10244	Pakri-Barwadih	Pakri-Barwadih Coal Mining in Jharkhand, India	4
10245	Gallok/Kallak	Gállok/Kallak Iron Mine, Sweden	2
10246	Ojnare Forest Lime Stone Mine	Ojnare Forest Lime Stone Mine, Gotland, Sweden	1
10247	Jharia Coalfield Fire	Jharia Coalfield Fire, India	3
10248	Jadugoda	Uranium Mining in Jadugoda, Jharkhand, India	1
10249	Garzweiler II	Lignite mining Garzweiler II (Immerath), Germany	1
10250	Garzweiler I	Lignite mining Garzweiler I, Germany	1
10251	Janschwalde (Horno)	Lignite mining Jänschwalde (Horno), Germany	2
10252	Welzow-Sued II	Lignite mining Welzow-Sued II (Welzow, Proschim), Germany	2
10253	Nochten II	Lignite mining Nochten II, Germany	2
10254	Mrima Hill	Mining of Rare Earths and Niobium in Mrima Hill, Kwale, Kenya	2
10255	Ronnbacken	Rönnbäcken Nickel Mine, Västerbotten, Sweden	2
10256	Douglas Valley	Opencast coal mine in Douglas Valley, Scotland, UK	1
10257	Cauldhall	Cauldhall Open Cast Coal Mine in Midlothian, Scotland, UK	1
10258	Jimbitono against mining and hydropower projects	Jimbitono against mining and hydropower projects, Ecuador	1
10259	W.Sahara & Sahrawi	Western Sahara and the Sahrawi people, Morocco	4
10260	Lake Natron	Soda ash mining in Lake Natron, Tanzania	1
10261	Manakara	Mainland Mine Manakara, Madagascar	1
10262	Sostanj	Coal power plant Sostanj - TES 6, Slovenia	1
10263	Leon	Metan se opone a proyecto Leon, Argentina	1
10264	Vinto	Vinto fundidora de antimonio y estaño (Bolivia)	2
10265	Fundicion Paipote	Fundicion Paipote (Videla Lira), Chile	1
10266	Manganesos Atacama	Manganesos Atacama, Chile	2
10267	Marlin	Marlin, Guatemala	3

ID	Label	Conflict Name	In Degree
10268	Cerro San Pedro	Cerro San Pedro mine, San Luis Potosi, Mexico	4
10269	Callao	Callao, Peru, lead pollution	20
10270	Chinchaycocha, Junin	Chinchaycocha, Junin, Peru	6
10272	Sesa Goa coke plant	Sesa Goa coke plant pollution, India	2
10273	Selaulim Dam Goa	Selaulim Dam Goa, India	4
10274	WTR Ranobe	WTR Ranobe forest mining, Madagascar	1
10275	Wirikuta	Mining project in Wirikuta	3
10276	Castilla Thermal Power Station	Castilla Thermal Power Station, Chile	2
10277	Caucaia, Ceara	Tapeba Indians threatened by companies and public policies in Caucaia, Ceara, Brazil.	2
10278	Sasan Power Project	Sasan Ultra Mega Power Project, India	2
10279	Mahan Coal Limited	Mahan Coal Limited, India	3
10280	Cerro de Pasco	Cerro de Pasco, Perú	1
10281	Nimmalapadu	Calcite mining in Nimmalapadu village, AP, India	2
10282	Los Pumas, Arica	Los Pumas, Arica, Chile	1
10283	Tilaiya Power Project	Tilaiya Ultra Mega Power Project, India	4
10284	Tampakan	Tampakan (Mindanao, Philippines)	2
10285	Goa iron mining	Goa, ban on iron mining	4
10286	Aznalcollar	Aznalcollar tailings dam failure, Spain	1
10287	Jaenschwalde-Nord	Lignite mining Jaenschwalde-Nord (Kerkwitz, Grabko, Atterwasch), Germany	2
10288	Cottbus Nord	Lignite mining Cottbus Nord (Lakoma), Germany	2
10289	Abandoned tin mines	Field Report 209 Abandoned tin mines endanger communities	1
10290	Agua Rica - Andalgala	Agua Rica - Andalgalá, Catamarca, Argentina	5
10291	Nalgonda	Nalgonda Uranium Mining, Andhra Pradesh, India	1
10292	Baradarha Power Station	Coal mine of Baradarha Thermal Power Station, Chhattisgarh, India	1
10293	Canaverales	Cañaverales, La Guajira, Colombia	3
10294	Desviacion rio Calenturitas	Desviacion rio Calenturitas, Cesar, Colombia	5
10295	Dojura, Choco	Dojura, Chocó, Colombia	2
10296	Paramo de Guacheneque	Paramo de Guacheneque, Colombia	3
10297	Paramo de Santurban	Paramo de Santurbán, Colombia	2
10298	Paz del Rio, Boyaca, Colombia	Paz del Río, Boyacá, Colombia	2
10299	Taraira, Vaupes	Taraira, Vaupes, Colombia	1
10300	Mountaintop	Mountaintop Mining Removal in West Virginia, USA	2
10301	Uranium in Navajo	Uranium Mining in the Southwest, Navajo Nation, USA	1
10303	Certej	Certej gold mining, Romania	5
10304	Bahia de Santa Marta	Coal transport by Drummond in Bahia de Santa Marta, Colombia	2
10305	El Morro	El Morro, Chile	2
10306	Ganeshpur	Ganeshpur Coal Mine, Jharkhand, India	3
10307	Gold-mining Bulgaria	Gold-mining and Cyanide -Bulgaria	1
10308	Drina River	Gravel and Sand Extraction from the Drina River, Serbia, Bosnia and Herzegovina	0
10309	Peam Krasop	Illegal sand mining in Peam Krasop Wildlife Sanctuary, Cambodia	2
10311	La Puya, Guatemala	La Puya, Guatemala	3
10312	Loma Miranda	Loma Miranda ferronickel mine, Dominican Republic	2
10313	Minera Candelaria	Minera Candelaria, Tierra Amarilla, Chile	2
10314	Trstenik	Nickel ore exploration mining, Trstenik, Serbia	1
10315	Potasas del Llobregat	Potasas del Llobregat, Catalonia	1
10316	Crandon	Proposed Crandon Mine in Northeast Wisconsin, USA	3
10317	Naljezici	Quarry Nalježići, Montenegro	3
10318	Rossing	Rio Tinto's Rössing Uranium Mine, Namibia	1
10319	Segovia	Segovia (gold mining), Antioquia, Colombia	3
10320	Talvivaara Mine	Talvivaara Mining Company	1
10321	Tambogrande	Tambogrande, Perú	1
10322	Titiribi	Titiribí, Antioquia, Colombia	2
10323	Veladero	Veladero, San Juan, Argentina	1
10324	Soalala	WISCO Soalala iron ore, Madagascar	1
10325	La Loma	La Loma Mine, Colombia	2
10326	Ixtacamaxtlitlan	Ixtacamaxtlitlan, Sierra Norte de Puebla	1
10327	Maria - Derrame	Maria - Derrame	2
10328	Mulatos	Mina de Oro Nacional afecta al pueblo de Mulatos	2
10329	Motozintla	Motozintla contra mineria de oro	1
10330	Tetela de Ocampo	Tetela de Ocampo, Sierra Norte de Puebla	1
10331	Proyecto Caballo Blanco	Veracruz se opone a Proyecto Caballo Blanco	1
10333	Zautla	Zautla, Sierra Norte de Puebla	1
10334	Sierra of Manantlan	Open-pit mining in Sierra of Manantlán	1
10335	Agua vale mas que el oro vs Azure Minerals	Organización Agua vale más que el oro vs. Corporation: Azure Minerals Ltd. (Subsidiary: Minera Piedra Azul S.A de C.V.)	1
10336	Agua vale mas que oro vs Argonaut	organization: Agua vale más que oro vs. Corporation: Argonaut Gold (Subsidiary: La Pitalla S.A. de C.V.)	1
10337	Tapachula	Tapachula community vs. Canadian mining corporation	0
10338	Solusuchiapa	Indigenous community of Solusuchiapa vs. Corporation: Grupo	1

ID	Label	Conflict Name	In Degree
		Frisco (Subsidiary: Minera San Francisco del Oro S.A. de C.V.)	
10339	Jimulco	Jimulco Fundation vs. Corporation: Freeport-McMoRan Copper & Gold Inc.(Subsidiary: Minera Cuicuilco S.A. de C.V.)	1
10341	Costa Montana	Regional coordinator community authorities vs. Corporation: Hochschild Mining (Subsidiary: Minera Zalamera S.A de C.V.)	1
10342	Nahuatl	Nahuatl indigenous community	1
10343	Tetlama	Indigenous community Tetlama vs. Corporaton: Esperanza Resources Corp. (Subsidiary: Esperanza Silver de Mexico S.A de C.V.)	1
10344	MAIZ	Zapatista Indigenous Agrarian Movement (MAIZ) vs. Arco Resources Corporation	1
10345	Todos Somos Tulcingo	Todos Somos Tulcingo vs. Corporation: Oro East Mining	1
10346	Serranos Unidos	Serranos Unidos en Resistecia indigena	1
10347	Tlatlauquitepec	Tlatlauquitepec vs. Compañía Minera Autlan S.A.B.	1
10348	Indigenous Autonomy and Territory	Front of Organizations in Defense of Indigenous Autonomy and Territory vs. Canadian Company	0
10349	Lavida vs. Silver Corp	Veracruz Assembly of Initiatives and Environmental Defense (Lavida) vs. Silver Corp	1
10350	Mazapil	Mazapil, Zacatecas vs. Goldcorp Inc	1
10351	Salaverna-Mazapil	Salaverna community, Mazapil, Zacatecas vs. Grupo Frisco	1

Appendix 2:
Significant bivariate relationships

		Commodity type				Odds Ratios	
		Base	Construction	Energy	Precious	Precious vs. Base	Precious vs. Energy
Timing of mobilisation	Latent	2.42% (3)	0% (0)	1.56% (1)	2.22% (3)	0.92	1.43
	Preventive	34.68% (43)	26.09% (6)	35.94% (23)	48.15% (65)	1.75	1.66
	In reaction	33.06% (41)	30.43% (7)	37.5% (24)	31.11% (42)	0.91	0.75
	Mobilization for reparations	29.84% (37)	43.48% (10)	18.75% (12)	17.04% (23)	0.48	0.89
	Unknown	0% (0)	0% (0)	6.25% (4)	1.48% (2)	N/A	0.23
Total # of observations		100% (124)	100% (23)	100% (64)	100% (135)		
p-value		0.16					

Table 2.1: Timing of mobilisation vs Commodity type

		Potential environmental impact immediate		Odds ratios	Potential health impact immediate		Odds ratios	Potential environmental impact long term		Odds ratios	Potential health impact Long term		Odds Ratios
		No	Yes	No vs Yes	No	Yes	No vs Yes	No	Yes	No vs Yes	No	Yes	No vs Yes
Type of Commodity	Base	39.66% (23)	35.07% (101)	0.82	36.73% (54)	35.18% (70)	0.93	30.26% (23)	37.41% (101)	1.38	38.5% (87)	30.83% (37)	0.71
	Construction	8.62% (5)	6.25% (18)	0.71	8.16% (12)	5.53% (11)	0.66	6.58% (5)	6.67% (18)	1.01	7.08% (16)	5.83% (7)	0.81
	Energy	34.48% (20)	15.28% (44)	0.34	23.81% (35)	14.57% (29)	0.55	28.95% (22)	15.56% (42)	0.45	21.24% (48)	13.33% (16)	0.57
	Precious	17.24% (10)	43.4% (125)	3.68	31.29% (46)	44.72% (89)	1.78	34.21% (26)	40.37% (109)	1.30	33.19% (75)	50% (60)	2.01
Total # of observations		100% (58)	100% (288)		100% (147)	100% (199)		100% (76)	100% (270)		100% (226)	100% (120)	
p-value		<0.001			0.033			0.067			0.02		

Table 2.2: Commodity type vs Potential environmental impacts: Immediate and Long term

		Country Income Level				Odds Ratios	
		Low-income	Lower-middle income	Upper-middle income	High-income	High income vs Low income	High income vs. Lower Middle
Timing of Mobilisation	Latent	3.85% (1)	1.72% (1)	2.43% (5)	0.00% (0)	N/A	N/A
	Preventive	23.08% (6)	15.52% (9)	45.15% (93)	51.79% (29)	0.28	0.17
	In reaction	69.23% (18)	53.45% (31)	25.24% (52)	23.21% (13)	7.44	3.80
	Mobilization for reparations	3.85% (1)	29.31% (17)	25.24% (52)	21.43% (12)	0.15	1.52
	Unknown	0.00% (0)	0.00% (0)	1.94% (4)	3.57% (2)		
Total # of observations		100.00% (26)	100.00% (58)	100.00% (206)	100.00% (56)		
p-value		<0.001					

Table 2.3: Timing of mobilisation vs Country Income level

		Observed Environmental impact – Long term		Odds Ratios
		No	Yes	Yes vs No
Income level of Country	Low-income	3.68% (5)	10.00% (21)	2.91
	Lower-middle	15.44% (21)	17.62% (37)	1.17
	Upper-middle	61.03% (83)	58.57% (123)	0.90
	High-income	19.85% (27)	13.81% (29)	0.65
Total # of observations		100% (136)	100% (210)	
p-value		0.087		

Table 2.4: Income level vs Observed environmental impact - Long term

		Observed environmental impact Immediate		Odds ratios	Observed health impact Immediate		Odds ratios	Observed health impact long term		Odds ratios
		No	Yes	Yes vs No	No	Yes	Yes vs No	No	Yes	Yes vs No
Income Level of country	Low-income	5.03% (8)	9.63% (18)	2.01	5.02% (12)	13.08% (14)	2.85	4.63% (12)	16.09% (14)	3.95
	Lower-middle	13.84% (22)	19.25% (36)	1.48	14.64% (35)	21.50% (23)	1.60	15.83% (41)	19.54% (17)	1.29
	Upper-middle	66.67% (106)	53.48% (100)	0.57	62.34% (149)	53.27% (57)	0.69	61.00% (158)	55.17% (48)	0.79
	High-income	14.47% (23)	17.65% (33)	1.27	17.99% (43)	12.15% (13)	0.63	18.53% (48)	9.20% (8)	0.45
Total # of observations		100% (159)	100% (187)		100% (239)	100% (107)		100% (259)	100% (87)	
p-value		0.073			0.011			0.001		

Table 2.5: Income level vs Observed impacts

		Conflict type-Extraction		Odds Ratio	Conflict type-Waste		Odds Ratio
		No	Yes	Yes vs No	No	Yes	Yes vs No
Timing of mobilisation	Latent	6.06% (2)	1.60% (5)	0.25	2.48% (5)	1.39% (2)	0.55
	Preventive	18.18% (6)	41.85% (131)	3.24	43.56% (88)	34.03% (49)	0.67
	In reaction	30.30% (10)	33.23% (104)	1.14	33.17% (67)	32.64% (47)	0.98
	Mobilization for reparations	45% (15)	21% (67)	0.33	17.82% (36)	31.94% (46)	2.16
	Unknown	0.00% (0)	1.92% (6)	N/A	2.97% (6)	0.00% (0)	0.00
Total # of observations		100% (33)	100% (313)		100% (202)	100% (144)	
p-value		0.004			0.008		

Table 2.6: Timing of mobilisation vs Conflict type: Extraction and Waste

		Mobilising groups: Excluded		Odds Ratios
		No	Yes	Yes vs No
Pathways: Dominant	Unsure	24.80% (31)	15.38% (34)	0.62
	Positive	46.40% (58)	45.70% (101)	0.98
	Negative	28.80% (36)	38.91% (86)	1.35
Total # of observations		100% (125)	100% (221)	
p-value		0.048		

Table 2.7: Dominant pathways vs Mobilising groups: Excluded

		Commodity types				Odds Ratios
		Base	Construct	Energy	Precious	Base vs Precious
Intensity	LATENT	7.26% (9)	8.70% (2)	6.25% (4)	3.70% (5)	1.96
	LOW	12.10% (15)	39.13% (9)	18.75% (12)	21.48% (29)	0.56
	MEDIUM	53.23% (66)	34.78% (8)	51.56% (33)	37.78% (51)	1.41
	HIGH	27.42% (34)	17.39% (4)	23.44% (15)	37.04% (50)	0.74
Total # of observations		100% (124)	100% (23)	100% (64)	100% (135)	
	P-value	0.016				

Table 2.8: Intensity vs Commodity types

		Potential Environmental impact - Immediate		Odds ratios	Potential Environmental impacts - Long term		Odds ratios
		0	1	0 vs 1	0	1	0 vs 1
Intensity	LATENT	15.52% (9)	3.82% (11)	0.25	11.84% (9)	4.07% (11)	0.34
	LOW	18.97% (11)	18.75% (54)	0.99	15.79% (12)	19.63% (53)	1.24
	MEDIUM	37.93% (22)	47.22% (136)	1.25	38.16% (29)	47.78% (129)	1.25
	HIGH	27.59% (16)	30.21% (87)	1.10	34.21% (26)	28.52% (77)	0.83
Total # of observations		100% (58)	100% (288)		100% (76)	100% (270)	
		p-value for independence test: 0.006			p-value for independence test: 0.037		

Table 2.9: Intensity vs potential environmental impact - Immediate and long term

		Observed health impact – Long term		Odds ratios
		0	1	0 vs 1
Intensity	LATENT	5.41% (14)	6.9% (6)	1.30
	LOW	21.62% (56)	10.34% (9)	0.42
	MEDIUM	47.49% (123)	40.23% (35)	0.74
	HIGH	25.48% (66)	42.53% (37)	2.16
Total # of observations		100% (259)	100% (87)	
		p-value for independence test: 0.008		

Table 2.10: Intensity vs observed health impacts - Long term

		Income				Odds ratios		
		Low-income	Lower-middle income	Upper-middle income	High-income	High vs low	High vs Lower-Middle	High vs Upper-Middle
Intensity	LATENT	0 0	10.34% (6)	4.37% (9)	8.93% (5)	N/A	0.85	2.15
	LOW	23.08% (6)	1.72% (1)	24.27% (50)	14.29% (8)	0.56	9.53	0.52
	MEDIUM	38.46% (10)	39.66% (23)	43.69% (90)	62.5% (35)	2.67	2.54	2.15
	HIGH	38.46% (10)	48.28% (28)	27.67% (57)	14.29% (8)	0.27	0.18	0.44
Total # of observations		100% (26)	100% (58)	100% (206)	100% (56)			
		p-value for independence test: <0.001						

Table 2.11: Intensity vs country income level

		Conflict type: Access		Odds ratios	Conflict type: Waste		Odds ratios
		No	Yes	Yes vs No	No	Yes	Yes vs No
Intensity	LATENT	9.87% (15)	2.6% (5)	0.24	6.44% (13)	4.86% (7)	0.74
	LOW	19.74% (30)	18.23% (35)	0.91	23.27% (47)	12.5% (18)	0.47
	MEDIUM	44.74% (68)	46.35% (89)	1.07	43.56% (88)	48.61% (70)	1.23
	HIGH	25.66% (39)	32.81% (63)	1.41	26.73% (54)	34.03% (49)	1.41
Total # of observations		100% (152)	100% (192)		100% (202)	100% (144)	
		p-value for independence test: 0.025			p-value for independence test: 0.057		

Table 2.12: Intensity vs Conflict type: Access and Waste

		Organising groups: Excluded		Odds ratios
		No	Yes	Yes vs No
Intensity	LATENT	8.8% (11)	4.07% (9)	0.44
	LOW	31.2% (39)	11.76% (26)	0.29
	MEDIUM	41.6% (52)	47.96% (106)	1.29
	HIGH	18.4% (23)	36.2% (80)	2.52
Total # of observations		100% (125)	100% (221)	
		p-value for independence test: <0.001		

Table 2.13: Intensity vs organising groups: Excluded

		Timing of Mobilisation					Odds ratios
		Latent	Preventive	In reaction	Mobilisation for reparations	Unknown	Preventive vs. Reaction
Intensity	LATENT	57.14% (4)	2.19% (3)	5.26% (6)	7.32% (6)	16.67% (1)	0.40
	LOW	28.57% (2)	17.52% (24)	17.54% (20)	20.73% (17)	33.33% (2)	1.00
	MEDIUM	14.29% (1)	52.55% (72)	40.35% (46)	45.12% (37)	33.33% (2)	1.64
	HIGH	0% (0)	27.74% (38)	36.84% (42)	26.83% (22)	16.67% (1)	0.66
Total # of observations		100% (7)	100% (137)	100% (114)	100% (82)	100% (6)	
		p-value for independence test: <0.001					

Table 2.14: Intensity vs timing of mobilisation

c		Pathways: Dominant			Odds ratios
		Unsure	Positive	Negative	Positive vs Negative
Intensity	LATENT	4.62% (39)	7.55% (12)	4.1% (5)	1.91
	LOW	16.92% (11)	20.75% (33)	17.21% (21)	1.26
	MEDIUM	56.92% (37)	54.09% (86)	28.69% (35)	2.93
	HIGH	21.54% (14)	17.61% (28)	50% (61)	0.21
Total # of observations		100% (65)	100% (159)	100% (122)	
		p-value for independence test: <0.001			

Table 2.15: Intensity vs Pathways: Dominant

		Intensity				Odds ratios
		LATENT	LOW	MEDIUM	HIGH	Low vs High
Success Level	No	55% (11)	55.38% (36)	38.61% (61)	50.49% (52)	1.22
	Not sure	30% (6)	33.85% (22)	37.97% (60)	26.21% (27)	1.44
	Yes	15% (3)	10.77% (7)	23.42% (37)	23.3% (24)	0.40
Total		100% (20)	100% (65)	100% (158)	100% (103)	
		p-value for independence test: 0.091				

Table 2.16: Success Level vs Intensity

		Current project status						Odds ratios
		Stopped	Proposed	Planned	Under construction	In operation	Unknown	Stopped vs. In operation
EJ success ?	No	12.68% (9)	31.43% (22)	35.71% (10)	57.69% (15)	68.75% (99)	71.43% (5)	0.07
	Not sure	16.9% (12)	58.57% (41)	42.86% (12)	38.46% (10)	27.78% (40)	0% (0)	0.53
	Yes	70.42% (50)	10% (7)	21.43% (6)	3.85% (1)	3.47% (5)	28.57% (2)	66.23
Total # of observations		100% (71)	100% (70)	100% (28)	100% (26)	100% (144)	100% (7)	
		p-value for independence test: <0.001						

Table 2.17: Success Level vs Current project status

		Observed Env. Imp.: Immediate		Odds ratios	Observed Health Imp.: Immediate		Odds ratios	Observed Soc. Ec. Imp.: Immediate		Odds ratios	Observed Env. Imp.: Long term		Odds ratios	Observed Health Imp.: Long term		Odds ratios
		No	Yes	Yes vs No	No	Yes	Yes vs No	No	Yes	Yes vs No	No	Yes	Yes vs No	No	Yes	Yes vs No
EJ success ?	No	30.2% (48)	59.9% (112)	3.45	39.3% (94)	61.7% (66)	2.483	41.9% (54)	48.9% (106)	1.33	27.1% (37)	58.6% (123)	3.78	38.6% (100)	69% (60)	3.53
	Not sure	36.5% (58)	30.5% (57)	0.76	36.8% (88)	25.2% (27)	0.579	28.7% (37)	35.9% (78)	1.40	38.7% (53)	29.2% (62)	0.66	37.8% (98)	19.5% (17)	0.40
	Yes	33.3% (53)	9.6% (18)	0.21	23.9% (57)	13.1% (14)	0.48	29.5% (38)	15.2% (33)	0.43	33.2% (46)	11.9% (25)	0.26	23.6% (61)	11.4% (10)	0.42
Total # of observations		100% (159)	100% (187)		100% (239	100% (107		100% (129)	100% (217)		100% (136)	100% (210)		100% (259)	100% (87)	
p-value		<0.001			0.001			0.006			<0.001			<0.001		

Table 2.18: Success level vs Observed impacts – Immediate and long term

		Timing of mobilisation					Odds ratios
		Latent	Preventive	In reaction	Mobilisation for reparations	Unknown	Preventive vs. Reaction
EJ success ?	No	71.43% (5)	21.9% (30)	61.4% (70)	60.98% (50)	83.33% (5)	0.18
	Not sure	28.57% (2)	41.61% (57)	25.44% (29)	31.71% (26)	16.67% (1)	2.09
	Yes	0% (0)	36.5% (50)	13.16% (15)	7.32% (6)	0% (0)	3.79
Total # of observations		100% (7)	100% (137)	100% (114)	100% (82)	100% (6)	
		p-value for independence test: <0.001					

Table 2.19: Success level vs Timing of mobilisation

		Income				Odds ratios		
		Low-income	Lower-middle income	Upper-middle income	High-income	High vs low	High vs Lower-Middle	High vs Upper-Middle
EJ success ?	No	84.62 22	53.45 31	43.69 90	30.36 17	0.08	0.38	0.56
	Not sure	11.54 3	29.31 17	33.98 70	44.64 25	6.18	1.94	1.57
	Yes	3.85 1	17.24 10	22.33 46	25 14	8.32	1.60	1.16
Total # of observations		100 26	100 58	100 206	100 56			
		p-value for independence test: 0.001						

Table 2.20: Success level vs Income level

		Pathways: Dominant			Odds ratios
		Unsure	Positive	Negative	Positive vs Negative
EJ success ?	No	47.69 31	33.96 54	61.48 75	0.32
	Not sure	40 26	34.59 55	27.87 34	1.37
	Yes	12.31 8	31.45 50	10.66 13	3.85
Total # of observations		100 65	100 159	100 122	
		p-value for independence test: <0.001			

Table 2.21: Success level vs Pathways: Dominant

		Timing of mobilisation					Odds ratios
		Latent	Preventive	In reaction	Mobilisation for reparations	Unknown	Preventive vs. Reaction
Project status	Stopped	0% (0)	28.47% (39)	13.16% (15)	18.29% (15)	33.33% (2)	2.63
	Proposed	42.86% (3)	37.23% (51)	13.16% (15)	1.22% (1)	0% (0)	3.91
	Planned	0% (0)	18.98% (26)	1.75% (2)	0% (0)	0% (0)	13.15
	Under construction	0% (0)	5.84% (8)	13.16% (15)	3.66% (3)	0% (0)	0.41
	In operation	57.14% (4)	7.3% (10)	57.02% (65)	75.61% (62)	50% (3	0.06
	Unknown	0% (0)	2.19% (3)	1.75% (2)	1.22% (1)	16.67% (1)	1.26
Total # of observations		100% (7)	100% (137)	100% (114)	100% (82)	100% (6)	
		p-value for independence test: 0.001					

Table 2.22: Project status vs Timing of mobilisation

		Income level				Odds ratios		
		Low-income	Lower-middle income	Upper-middle income	High-income	High vs low	High vs Lower-Middle	High vs Upper-Middle
Project status	Stopped	0% (0)	18.97% (11)	21.84% (45)	26.79% (15)		1.56	1.31
	Proposed	11.54% (3)	15.52% (9)	23.3% (48)	17.86% (10)	1.67	1.18	0.72
	Planned	11.54% (3)	3.45% (2)	7.28% (15)	14.29% (8	1.28	4.67	2.12
	Under construction	11.54% (3)	10.34% (6)	7.77% (16)	1.79 (1)	0.14	0.16	0.22
	In operation	65.38% (17)	48.28% (28)	37.38% (77)	39.29% (22)	0.34	0.69	1.08
	Unknown	0% (0)	3.45% (2)	2.43% (5)	0% (0)			
Total # of observations		100% (26)	100% (58)	100% (206)	100% (56)			
		p-value for independence test: 0.046						

Table 2.23: Project status vs Income level

		Conflict type-Access		Odds ratios	Conflict type-Waste		Odds ratios
		No	Yes	Yes vs No	No	Yes	Yes vs No
Project status	Stopped	19.74% (30)	21.35% (41)	1.10	21.78% (44)	18.75% (27)	0.83
	Proposed	23.03% (35)	18.23% (35)	0.75	23.76% (48)	15.28% (22)	0.58
	Planned	9.87% (15)	6.77% (13)	0.66	9.9% (20)	5.56% (8)	0.54
	Under construction	2.63% (4)	11.46% (22)	4.79	6.44% (13)	9.03% (13)	1.44
	In operation	40.79% (62)	41.67% (80)	1.04	36.14% (73)	49.31% (71)	1.72
	Unknown	3.95% (6)	0.52% (1)		1.98% (4)	2.08% (3)	
Total # of observations		100% (202)	100% (144)		100% (202)	100% (144)	
p-value		0.008			0.088		

Table 2.24: Project status vs Conflict type – Access and waste

		Organising Groups: Economic Actors		Odds ratios
		No	Yes	Yes vs No
Project status	Stopped	16.88% (13)	21.56% (58)	1.35
	Proposed	32.47% (25)	16.73% (45)	0.42
	Planned	10.39% (8)	7.43% (20)	0.69
	Under construction	3.9% (3)	8.55% (23)	2.30
	In operation	36.36% (28)	43.12% (116)	1.33
	Unknown	0% (0)	2.6% (7)	
	Total # of observations	100% (77)	100% (269)	
	p-value	0.023		

Table 2.25: Project status vs Organising groups – Economics Actors

		Pathways: Dominant			Odds ratios
		Unsure	Positive	Negative	Positive vs Negative
Project status	Stopped	9.23% (6)	33.96% (54)	9.02% (11)	5.19
	Proposed	26.15% (17)	13.21% (21)	26.23% (32)	0.43
	Planned	9.23% (6)	7.55% (12)	8.2% (10)	0.91
	Under construction	7.69% (5)	6.29% (10)	9.02% (11)	0.68
	In operation	46.15% (30)	36.48% (58)	45.9% (56)	0.68
	Unknown	1.54% (1)	2.52% (4)	1.64% (2)	1.55
	Total # of observations	100% (65)	100% (159)	100% (122)	
	p-value for independence test: <0.001				

Table 2.19: Project status vs Pathways: Dominant

Appendix 3:
Multivariate analysis, success level in ordinal scale as the dependent variable

Explanatory factors	EJ-SCALE (0-5)
Average eigenvector centrality of companies	0.75 *
	(0.41)
Low or latent intensity	-0.40 ***
	(0.15)
Stopped	2.21 ***
	(0.19)
Health impact-immediate-observed	0.07
	(0.16)
Health impact-long term-observed	-0.29 *
	(0.18)
Environmental impact-immediate-observed	-0.12
	(0.22)
Environmental impact-long term-observed	-0.23
	(0.22)
Socio-economic impact-immediate-observed	-0.10
	(0.14)
Preventive	0.91 ***
	(0.16)
Low income	-0.43
	(0.31)
Middle-lower income	-0.06
	(0.25)
Middle-higher income	-0.02
	(0.20)
Negative pathways	-0.43 ***
	(0.14)
International financial institutions	-0.04
	(0.21)
Constant	2.59 ***
	(0.26)
Total # of cases	346
R^2	0.54

Appendix 4:
Mining companies presented in the network analysis

Id	Label	Names	Out-Degree
20001	A.A.A. Minera SA	A.A.A. Minera S.A. (Peru)	1
20002	Acerias Paz de Rio	Acerias Paz del Rio (Colombia)	2
20003	Aconcagua	Aconcagua S.A (Chile)	1
20004	Activos Mineros	Activos Mineros S.A. (Peru)	1
20005	Adhunik Power Ltd	Adhunik Power and Natural Resource Limited (India)	1
20006	Aditya Birla	Aditya Birla Group (India)	1
20007	Aditya Sponge and Power	Aditya Sponge & Power Ltd (India)	1
20008	Adubos Trevo	Adubos Trevo (Brazil)	1
20009	Adur Madencilik	Adur Madencilik Ltd. (Turkey) {Aldridge Uranium Inc. (Canada)}	1
20010	AEI	AEI (USA)	1
20011	Africa Barrick Gold	Africa Barrick Gold (United Kingdom) {Barrick Gold Corporation (Canada)}	1
20012	AKTOR	AKTOR A.T.E. (Greece) {Eldorado Gold [EG] (Canada)}	1
20013	Alamos Gold	Alamos Gold (Canada)	2
20014	Alcoa	Alcoa (United States of America)	2
20015	Aldridge Uranium	Aldridge Uranium Inc. (Canada)	2
20016	Alexander Mining	Alexander Mining Plc	1
20017	Almaden Minerals	Almaden Minerals Ltd. (Canada)	2
20018	American Port Inc	American Port Company Inc.	1
20019	ANABI	ANABI SAC	1
20020	Andacollo Gold	Andacollo Gold [MAGSA] (Argentina) {Barrick Gold Corporation (Canada)}	1
20021	APMDC	Andhra Pradesh Mineral Development Corporation [APMDC] (India)	1
20022	Anglo American	Anglo American (South Africa)	8
20023	Anglo American Platinum	Anglo American Platinum (South Africa)	3
20024	AngloGold Ashanti	Anglo Gold Ashanti (South Africa)	15
20025	Anjin Investments	Anjin Investments (China)	2
20026	Anrak Aluminium	Anrak Aluminium Ltd (India)	1
20027	Antofagasta	Antofagasta Holdings (Chile) {Grupo Luksic (Chile)}	1
20028	Aquiline	Aquiline Resources (Canada)	2
20029	Arcelor Mittal	Arcelor Mittal (Luxembourg)	1
20030	Arco Res.	Arco Resources Corporation (Canada)	1
20031	AREVA	Areva (France)	7
20032	AMD	Argentina Mineral Development [AMD] (Argentina)	1
20033	Argonaut Gold	Argonaut Gold (Canada)	2
20034	Asarco Inc.	Asarco Incorporated (Mexico)	1
20035	Ascendant Copper	Ascendant Copper (Canada)	1
20036	Atacocha	Atacocha	1
20037	Atalaya	Atalaya	1
20038	Aura Gold	Aura Gold (Canada)	1
20039	Azure Minerals Ltd.	Azure Minerals Ltd. (Australia)	1
20040	B2Gold	B2Gold Corp (Canada)	5
20041	BACRIM	BACRIM	1
20042	BMM	Balkan Mineral and Mining (Bulgaria)	1
20043	Barrick Gold	Barrick Gold Corporation (Canada)	15
20044	Barrick Misquichilca	Barrick Misquichilca (Peru) {Barrick Gold Corporation (Canada)}	2
20045	Base Res.	Base Resources (Australia)	1
20046	Batero Gold	Batero Gold Corp (Canada)	1
20047	Beowulf Mining	Beowulf Mining Plc. (United Kingdom)	1
20048	BCCL	Bharat Coking Coal Limited [BCCL] (India)	1
20049	BHP Billiton	BHP Billiton (Australia)	14
20050	Billiton Chile	Billiton Chile S.A. (Chile) {BHP Billiton (Australia)}	1
20051	Birla Periclase	Birla Periclase (India) {Indian Rayon and Industries (India)}	1
20052	BlackFire Exploration	BlackFire Exploration Ltd. (Canada)	1
20053	Boliden	Boliden (Sweden)	1
20054	Bougainville Copper	Bougainville Copper (Australia)	1
20055	TBA	Brazilian Technique of Food [TBA] (Brazil)	1
20056	Breakwaters	Breakwater	1
20057	BSG Resources	BSG Resources (South Africa)	3
20058	Bunge Fertilizantes	Bunge Fertilizantes S.A (USA)	1
20059	Cambior	Cambior (Canada)	2
20060	Canariaco Copper Peru SA	Canariaco Copper Peru S.A. (Canada) {Candente Copper Corp. (Canada)}	1
20061	Candente Copper	Candente Copper Corp. (Canada)	2
20062	Cantas Construction	Cantas Construction (Turkey)	1
20063	Cantera las Delicias	Cantera las Delicias (Colombia)	1
20064	Cape	Cape PLC (United Kingdom)	2

Id	Label	Names	Out-Degree
20065	Conde	Caramanta Conde Mine (Canada)	1
20066	Carboandes	CARBOANDES (Colombia)	1
20067	Carbones de la Jagua	Carbones de la Jagua	1
20068	Carbones del Caribe	Carbones del Caribe (Colombia)	1
20069	Carbones del Cerrejon	Carbones del Cerrejon Ltd (Colombia)	2
20070	Carbones del Cesar	Carbones del Cesar (Colombia)	1
20071	Carbones del Tesoro	Carbones del Tesoro	1
20072	Carboriente	Carboriente (Colombia)	1
20073	Caruso	Caruso Jr Estudos Ambientais and Engenharia Ltda (Brazil)	1
20074	Casapalca	Casapalca	1
20075	Cadam	Caulim da Amazonia [Cadam] (Brazil)	1
20076	CCX Carbon de Colombia	CCX Carbon de Colombia	1
20077	Cementos Progreso	Cementos Progreso SA (Guatemala)	1
20078	Cemex	Cemex (Mexico)	1
20079	Central Coalfields Ltd	Central Coalfields Limited [CCL] (India)	1
20080	Cerapeles	Cerapeles (Brazil)	1
20081	Cerro Matoso SA	Cerro Matoso S.A. (Australia) {BHP Billiton (Australia)}	2
20082	CFI	CFI [IFC, World Bank] (USA)	1
20083	CGX Castilla	CGX Castilla Generacion S.A.	1
20084	CNNC	China National Nuclear Corporation	1
20085	CRCC	China Railway Construction Corp. Ltd. (China)	1
20086	Chowgule	Chowgule and Co. Ltd (India)	1
20087	Chungar	Chungar	1
20088	Coal Corp	Coal Corp (Colombia)	1
20089	Coal India	Coal India Limited [CIL] (India)	2
20090	Coal River Mining	Coal River Mining LLC (United States of America)	1
20091	Codesaima	Codesaima (Brazil)	1
20092	Coeur d'Alene	Coeur d'Alene Mines (United States of America)	3
20093	Coltan SAS	Coltan SAS (Colombia)	1
20094	COMINAK	COMINAK {Areva (France)}	1
20095	COMUF	Compagnie des Mines d Uranium de Franceville [COMUF] (Gabon) {Areva (France)}	1
20096	COBRAC	Companhia Brazileira de Chumbo [COBRAC] (Brazil)	1
20097	Brazileira do Aluminio	Companhia Brazileira do Aluminio [CBA] (Brazil)	1
20098	Cimento Portland Itau	Companhia Cimento Portland Itau (Brazil)	1
20099	CMR	Companhia de Mineracao do Estado de Rondonia [CMR] (Brazil)	1
20100	Aceros del Pacifico	Compania de Aceros del Pacifico (Chile)	2
20101	CEMSA	Compania de Exploracion Mineral [CEMSA] (Panama)	1
20102	CGN	Compania Guatemalteca de Niquel (CGN) [CGN] (Guatemala) {Solway Investment Group (Russia)}	1
20103	Minera Antamina S.A	Compania Minera Antamina S.A (Peru)	1
20104	Minera Ares	Compania Minera Ares SAC (Peru)	1
20105	Minera Aurex	Compania Minera Aurex (Peru)	1
20106	Minera Autlan SA	Compania Minera Autlan S.A.B. (Mexico)	1
20107	Minera Cerro Colorado	Compania Minera Cerro Colorado Ltda. (Chile)	1
20108	Minera Entre Mares	Compania Minera Entre Mares (Guatemala)	1
20109	Minera Escondida	Compania Minera Escondida S.A. (Chile)	1
20110	Minera Nevada	Compania Minera Nevada Ltda (Chile)	2
20111	Minera San Juan SA	Compania Minera San Juan S.A. (Peru)	1
20112	Proc. de Min.	Compania Procesadora de Minerales SA (Bolivia)	1
20113	Consolidated Tin Mines of Nigeria Ltd	Consolidated Tin Mines of Nigeria Limited	1
20114	CEMEX	Consorcio Minero Dominicano [CEMEX] (Dominican Republic)	1
20115	Consorcio Minero Unido	Consorcio Minero Unido	1
20116	Benito Juarez Pena Colorada	Consortium Benito Juarez Pena Colorada (Mexico) {Ternium (Luxembourg)}	1
20117	Continental de Carbones	Continental de Carbones (Colombia)	1
20118	Continental Gold	Continental Gold (Canada)	1
20119	Continuum Res.	Continuum Resources (Canada)	2
20120	COPEC	COPEC (Chile)	1
20121	CORMIN Callao	CORMIN Callao (Peru)	1
20122	Cormine	Cormine (Argentina)	1
20123	Coro Mining	Coro Mining Corp. (Canada)	2
20124	Corona	Corona	1
20125	COMIBOL	Corporacion Minera de Bolivia [COMIBOL] (Bolivia)	4
20126	CODELCO	Corporacion Nacional del Cobre [CODELCO] (Chile)	4
20127	CETEC	Corporacion para Estudios Interdisciplinarios y Asesoria Tecnica [CETEC]	1
20128	Corriente Argentina	Corriente Argentina S.A. (Argentina) {Corriente Resources (Canada)}	1
20129	Corriente Res.	Corriente Resources (Canada)	2
20130	Cortec	Cortec Mining Kenya Ltd (Kenya)	1
20131	COMIN	Corumba Mineracao Ltda [COMIN] (Brazil)	1

Id	Label	Names	Out-Degree
20132	Cosigo Res.	Cosigo Resources (Canada)	2
20133	CMC	Coto Minero del Cantabrico (CMC) (Spain)	1
20134	Tongguan	CRCC-Tongguan Investment Co. Ltd. (China)	3
20135	CSR	CSR Wittenoom (Australia)	1
20136	CUMBINAMA	CUMBINAMA S.A (Ecuador) {ECUANOR. S.A (Ecuador/Norway)}	1
20137	Curimining	Curimining (Ecuador)	1
20138	DVC	Damodar Valley Corporation (India)	2
20139	Dayton	Dayton (Canada)	1
20140	DB Power Ltd	DB Power Limited	1
20141	De Beers	De Beers (South Africa)	1
20142	Debswana	Debswana (Botswana)	1
20143	Deepak Minerals	Deepak Minerals Pvt. Ltd. (India)	1
20144	Deepak Steel	Deepak Steel and Power Ltd. (India)	1
20145	Depromin	Desarrollo de Prospectos Mineros S.A. [Depromin] (Argentina)	2
20146	DESMINIC	Desarrollo Minero de Nicaragua [DESMINIC] (Nicaragua)	1
20147	Deva Gold SA	Deva Gold SA (Romania) {Eldorado Gold}	1
20148	Dvpmt Trust of Zimbabwe	Development Trust of Zimbabwe (Zimbabwe)	3
20149	Diamond Mining Corp.	Diamond Mining Corporation (United Arab Emirates)	2
20150	Dipeza	Dipeza (Colombia)	1
20151	Disercom SA	Disercom S.A (Colombia)	1
20152	Doe Run	Doe Run	2
20153	Dominium	Dominium Minerals Corp.(USA)	1
20154	Dorado SA	Dorado Exploraciones S.A. {Pacific Rim (Canada)}	1
20155	Dorato Res	Dorato Resources Inc. (Canada)	1
20156	DRDGold	DRDGold (South Africa)	1
20157	Drummond	Drummond (USA)	4
20158	DTZ OZGEO	DTZ OZGEO (Zimbabwe) {Development Trust of Zimbabwe (Zimbabwe)} {OZGEO (Russia)}	1
20159	DPM	Dundee Precious Metals [DPM] (Canada)	2
20160	DVC EMTA	DVC EMTA Coalmines Ltd [EMTA] (India) {Damodar Valley Corporation (India)}	1
20161	Eastern Association Coal	Eastern Association Coal LLC (United States of America)	1
20162	Eco Oro	Eco Oro (Canada)	1
20163	Ecuacorriente	Ecuacorriente S.A. (Ecuador) {CRCC-Tongguan Investment Co. Ltd. (China)}	2
20164	Ecuanor	ECUANOR. S.A (Ecuador/Norway)	2
20165	Edgerwater Corp.	Edgerwater Corporation Ldt. (Canada)	2
20166	Eldoradogold	Eldorado Gold [EG] (Canada)	5
20167	EDF	Electricite de France - EDF (France)	1
20168	Electroandes	Electroandes	1
20169	ElectroPeru	ElectroPeru	1
20170	Electrum Strategic Holdings	Electrum Strategic Holdings LLC	1
20171	Inti Raymi	Empresa Minera Inti Raymi S.A. (Bolivia) {Newmont Mining Corporation (United States of America)}	2
20172	Minera Manquiri	Empresa Minera Manquiri (Bolivia) {Coeur d'Alene Mines (United States of America)}	2
20173	ENAMI EP	ENAMI EP (Ecuador)	2
20174	Energy Africa	Energy Africa	1
20175	Entre Mares Corp.	Entre Mares Corp. (Honduras)	1
20176	Ericsson	Ericsson (Sweden)	1
20177	Esperada SA	Esperada S.A.C. (Peru)	1
20178	Esperanza Res.	Esperanza Resources Corp. (Canada)	1
20179	Esperanza Silver	Esperanza Silver de Mexico S.A de C.V. (Mexico) {Esperanza Resources Corp. (Canada)}	1
20180	Essar Power Limited	Essar Power Limited (India)	1
20181	Eternit	Eternit (Brazil)	1
20182	Eti Silver Corp.	Eti Silver Corporation (Turkey)	1
20183	European Goldfields	European Goldfields LTD (Canada)	1
20184	ENK	European Nickel [ENK] (United Kingdom)	1
20185	Exeter	Exeter (Canada)	1
20186	EXMINGUA	EXMINGUA (Exploraciones Mineras de Guatemala) (Guatemala) {KCA (Kappes, Cassiday and Associates) (United States of America)}	1
20187	EMA	Exploraciones Mineras Argentinas S.A (Argentina)	1
20188	Exploration Ltd	Exploration Limited (Australia)	1
20189	Exxaro Res.	Exxaro Resources Limited (South Africa)	2
20190	Falconbridge	Falconbridge (Canada)	2
20191	Ferrocarriles del Norte	Ferrocarriles del Norte de Colombia (Colombia)	1
20192	First Majestic	First Majestic (Canada)	4
20193	First Majestic Silver	First Majestic Silver Corp {First Majestic (Canada)}	1
20194	FMC Lithium Corp	FMC Lithium Corp.	1
20195	Fomento	Fomento (India)	1
20196	Fomicruz	Fomento Minero de Santa Cruz Sociedad del Estado	1

Id	Label	Names	Out-Degree
		[Fomicruz] (Argentina)	
20197	Fortuna Silver	Fortuna Silver Mines Inc. (Canada)	1
20198	Fortune Minerals	Fortune Minerals (Canada)	1
20199	Freeport McMoran	Freeport McMoran Copper & Gold Inc. (United States of America)	4
20200	CEA	French Commission Energie Atomique CEA (France)	1
20201	Frontier Pacific	Frontier Pacific (Canada)	1
20202	Frontino	Frontino Gold Mines (United States of America)	1
20203	F.San Antonio-Arzobispado	Fundacion San Antonio-Arzobispado de Bogota (Colombia)	1
20204	Fundespo	Fundespo (Bolivia)	1
20205	Gabriel Res.	Gabriel Resources [GR] (Canada)	2
20206	Gaia Energy Argentina SA	Gaia Energy Argentina S.A. (Argentina)	1
20207	GCM Resources	GCM Resources (UK)	1
20208	GEFCO	GEFCO (UK)	1
20209	Gem Diamonds	Gem Diamonds (UK)	1
20210	Gencor	Gencor (United States of America)	2
20211	General Guemes	General Guemes - Generacion cloruro de litio	1
20212	Geoperforaciones	Geoperforaciones (Colombia)	1
20213	Gestiones y Recuperaciones de Activos	Gestiones y Recuperaciones de Activos S.A. (Peru)	1
20214	Glamis Gold	Glamis Gold (Canada) {Goldcorp Inc. (Canada)}	3
20215	Glencair	Glencair Gold Corporation (Canada)	1
20216	Glencore-Xstrata	Glencore-Xstrata (Switzerland)	15
20217	Gold Canyon Res.	Gold Canyon Resources Inc. (Canada)	1
20218	Gold Group Candymin	Gold Group Candymin S.A (Canada)	1
20219	GoldCorp	Goldcorp Inc. (Canada)	9
20220	Golden Amera Res.	Golden Amera Resources Inc (Colombia)	1
20221	Golden Peaks Res.	Golden Peaks Resources Ldt (Canada)	1
20222	Golden Star Res.	Golden Star Resources (Canada)	1
20223	Goldman Sachs	Goldman Sachs	1
20224	Grancolombia Gold	Gran Colombia Gold (Canada)	4
20225	Gravicol	Gravicol S.A (Colombia)	1
20226	Gravillera Albania	Gravillera Albania (Colombia)	1
20227	Great Panther Res.	Great Panther Resources Ltd (Canada)	1
20228	Greenstone Res.	Greenstone Minera (Canada)	1
20229	Grewal Associates Ltd	Grewal Associates M/s N.K. Bhojani P Ltd. (India)	1
20230	Greystar	Greystar (Canada)	1
20231	Grupo Carso	Grupo Carso (Mexico)	1
20232	Grupo DAABON	Grupo DAABON (Colombia)	1
20233	Grupo Frisco	Grupo Frisco (Mexico)	4
20234	Grupo Luksic	Grupo Luksic (Chile)	2
20235	Grupo Mexico	Grupo Mexico (Mexico)	7
20236	Grupo Sureno Ocho Rojo	Grupo Sureno Ocho Rojo, S. A. (Costa Rica)	1
20237	Grupo Sureno Rojo	Grupo Sureno Rojo (Costa Rica)	1
20238	Grupo Sureno Seis Negro	Grupo Sureno Seis Negro (Costa Rica)	1
20239	Grupo Trevo	Grupo Trevo (Brazil)	1
20240	Votorantim Cimentos	Grupo Votorantim Cimentos (Brazil)	1
20241	Guangdong Nuclear	Guangdong Nuclear Power (China)	1
20242	Gunfalt Construction	Gunfalt Construction Inc. (Turkey)	1
20243	Gur Concrete Inc	Gur Concrete Inc. (Turkey)	1
20244	Hargreaves Services	Hargreaves Services (UK)	1
20245	Hidroabanico SA	Hidroabanico S.A (Ecuador)	1
20246	Hindalco	Hindalco Industries Limited [HIL] (India)	2
20247	HMI Nickel	HMI Nickel (Canada) {HudBay Minerals Inc. (Canada)}	1
20248	Hochschild	Hochschild Mining (UK)	3
20249	Holcim	Holcim (Switzerland)	2
20251	SUMITOMO	Holding SUMITOMO (Indonesia)	1
20252	HudBay Minerals	HudBay Minerals Inc. (Canada)	2
20253	Hydro	Hydro (Norway)	1
20254	IAMGold	Iamgold Corporation (Canada)	4
20255	Iamgold Ecuador SA	Iamgold Ecuador S.A/ (Ecuador) {Iamgold Corporation (Canada)}	1
20256	Iberian Res.	Iberian Resources Corp (Canada)	1
20257	Iberpotash	Iberpotash (Israel)	1
20258	IGE Resources AB	IGE Resources AB (Sweden)	2
20259	IMEX Callao SA	IMEX Callao S.A.	1
20260	Imouraren SA	Imouraren SA {Areva (France)}	1
20261	Indal	Indal (India)	1
20262	Indian Aluminium Company	Indian Aluminium Company (India)	1
20263	Indian Rayon and Ind.	Indian Rayon and Industries (India)	2
20264	IFC	Industria de Fosfatados Catarinense [IFC] (Brazil)	1
20265	IMMSA	Industrial Minera Mexico (IMMSA) {Grupo Mexico (Mexico)}	2
20266	Industries & Commerce and Govt. of RAS Al Khaimah	Industries & Commerce and Govt. of RAS Al Khaimah (United Arab Emirates)	1
20267	Infinito Gold	Infinito Gold Ltd. (Canada)	1

Id	Label	Names	Out-Degree
20268	Inmet	Inmet Mining Corporation (Canada)	1
20269	ITP	Instituto de Tecnologia Socioambiental de Paracatu [ITP] (Brazil)	1
20270	IMC	Internacional Minerals Corporation [IMC] (Canada)	1
20271	INV metals	INV metals (Canada) {Iamgold Corporation (Canada)}	1
20272	Invercoal	Invercoal (Colombia)	1
20273	Mineras Del Sur	Inversiones Mineras Del Sur S.A. [INMINSUR] (Peru)	1
20274	Jamies Hardie	Jamies Hardie (Australia)	1
20275	JOGMEC	Japan Oil, Gas and Metals National Corporation [JOGMEC] (Japan)	1
20276	JDC Minerales	JDC Minerales, S.A. (China)	1
20277	Jeco Corp.	Jeco Corporation (Japan) {Mitsubishi Corporation (Japan)}	1
20278	JIPL	Jharkhand Integrated Power Limited [JIPL] (India)	1
20279	Jinchuan	Jinchuan (China)	1
20280	Jindal South West Holding Ltd	Jindal South West Holding Ltd (India)	1
20281	Jokkmokk Iron Mines AB	Jokkmokk Iron Mines AB (Sweden)	1
20282	Junefield	Junefield (China)	1
20283	KaMin LLC	KaMin LLC (Belgium)	1
20284	KCA	KCA (Kappes, Cassiday and Associates) (United States of America)	2
20285	Kerr-McGee Corp	Kerr-McGee Corp. (United States of America)	2
20286	Kinross Gold	Kinross Gold (Canada)	3
20287	Kinross-Aurelian	Kinross-Aurelian (Canada)	1
20288	Koidu Holdings Limited	Koidu Holdings Limited (South Africa) {BSG Resources (South Africa)}	1
20289	KCM	Konkola Copper Mines [KCM] (Zambia)	1
20290	KEPC	Korea Electrical Power Company (South Korea)	1
20291	KPM	Korea Panama Mining [KPM] (South Korea)	1
20292	KORES	Korea Resources Corporation (KORES) (South Korea)	2
20293	Koza Altin	Koza Altin (Turkey)	1
20294	Kusum Powermet	Kusum Powermet Pvt. Ltd. (India)	1
20295	Kwekwe Consolidated Gold	Kwekwe Consolidated Gold Mines (Australia)	1
20296	LYP	L.Y.P. Group Co Ltd (L.Y.P. Group) [L.Y.P] (Cambodia)	1
20297	La Pitalla SA	La Pitalla S.A. de C.V. (Mexico) {Argonaut Gold (Canada)}	1
20298	La Ponderosa	La Ponderosa (Spain)	1
20299	Lake Natron Res Ltd	Lake Natron Resources Ltd National Development Corporation of Government of Tanzania (Tanzania) {Tata Group (India)}	1
20300	Las Encinas SA	Las Encinas S.A. de C.V. {Ternium (Luxembourg)}	1
20301	LEMAR	LEMAR (Spain)	1
20302	Linear Gold	Linear Gold (Canada)	2
20303	Lowell Mineral	Lowell Mineral Exploration	1
20304	M.S.P. Sponge Iron	M/s M.S.P. Sponge Iron (India)	1
20305	M/s Rungta	M/s Rungta Mines (India)	1
20306	Gimpex Lt	M/s. Gimpex Ltd. (India)	1
20307	Maa Tarini Ind.	Maa Tarini Industries	1
20308	MAG Silver	MagSilver (Canada)	2
20309	Mainland Mining Ltd	Mainland Mining Ltd (China)	2
20310	Majaz SA	Majaz S.A. Mine (Peru)	1
20311	Magyar Aluminium Ltd	MAL-Magyar Aluminium Ltd. (Hungary)	1
20312	Mangalam Ispat Ltd	Mangalam Ispat Pvt. Ltd. (India)	1
20313	Manganesos Atacama SA	Manganesos Atacama S.A. (Chile)	1
20314	Manhattan Minerals	Manhattan Minerals (Canada)	1
20315	Manto Rojo	Manto Rojo (Mexico)	1
20316	Manwick Granites	Manwick Granites (Italy)	1
20317	Marange Res.	Marange Resources (Zimbabwe)	2
20318	Maurel et Prom	Maurel et Prom (France)	1
20319	Mauricio Hochschild	Mauricio Hochschild Argentina SA (Argentina)	1
20320	Mavi Filo Ltd	Mavi Filo Automotive Tourism Mining Industry and Commerce Limited Company (Turkey)	1
20321	Mbada Diamonds	Mbada Diamonds (Zimbabwe)	2
20322	Mecsek-ko Zrt.	Mecsek-ko Zrt. (Hungary)	1
20323	Mecsekrc Zrt.	Mecsekrc Zrt. (Hungary)	1
20324	Media Luna	Media Luna (Mexico) {Teck Resources Limited (Canada)}	1
20325	Medoro Res.	Medoro Resources (Canada)	3
20326	Meridian Gold	Meridian Gold (Canada)	1
20327	MRW	Metales Procesados MRW S.A. (Canada)	1
20328	Metaleurop	Metaleurop (France)	1
20329	Metallica Res.	Metallica Resources Inc. (Canada)	1
20330	MCC	Metallurgical Construction Corporation [MCC] (China)	1
20331	MINALMO	MINALMO (Colombia)	1
20332	Milpo	Milpo	1
20333	Minas de Oro Nacional	Minas de Oro Nacional S.A. de C.V. (Mexico)	1
20334	Minecs Finvest holding	Minecs Finvest holding (Australia)	1
20335	Minefinders	Minefinders Corporation (Canada)	1

Id	Label	Names	Out-Degree
20336	Mineira de Corcoesto	Mineira de Corcoesto S.L (Spain) {Edgerwater Corporation Ldt. (Canada)}	1
20337	Minera Afrodita	Minera Afrodita S.A. (Peru)	1
20338	Minera Agua Rica	Minera Agua Rica LLC	1
20339	Minera Aguilar	Minera Aguilar (Argentina)	1
20340	Minera Alumbrera	Minera Alumbrera Limited MAA (Argentina)	1
20341	Minera Andes	Minera Andes SA (Argentina)	1
20342	Buenaventura	Minera Buenaventura (Peru)	7
20343	Minera Chinalco	Minera Chinalco (China)	1
20344	Minera Cuicuilco	Minera Cuicuilco S.A. de C.V. {Freeport-McMoRan Copper & Gold Inc.}	1
20345	Minera del Altiplano	Minera del Altiplano S.A. (Argentina)	1
20346	Minera El Cascabel	Minera El Cascabel (Mexico) {MagSilver (Canada)}	1
20347	Minera Mexicana el Rosario	Minera El Rosario (Mexico)	1
20348	Minera Gavilan	Minera Gavilan S.A de C.V. {Almaden Minerals}	1
20349	Minera Hemisferio Sur SCM	Minera Hemisferio Sur S.C.M (Chile)	1
20350	Minera Lizandro Proano SA	Minera Lizandro Proano S.A. (Peru)	1
20352	Miski Mayo	Minera Miski Mayo S.A.C (Peru)	2
20354	Minera Panama	Minera Panama SA (Panama)	1
20355	Minera Paredones Amarillos	Minera Paredones Amarillos (Mexico)	1
20356	Minera Piedra Azul SA	Minera Piedra Azul S.A de C.V. {Azure Minerals Ltd. }	1
20359	Minera San Cristobal	Minera San Cristobal S.A. (Bolivia)	1
20360	Minera San Francisco	Minera San Francisco del Oro S.A. de C.V. {GRUPO FRISCO}	1
20361	Minera San Jorge	Minera San Jorge S.A. (Argentina) {Coro Mining Corp. (Canada)}	1
20362	Minera San Xavier	Minera San Xavier S.A. (Mexico)	1
20363	Minera Santa Cruz	Minera Santa Cruz S.A. (Argentina)	2
20364	Minera Yanacocha	Minera Yanacocha (Peru)	1
20365	Minera Zalamera	Minera Zalamera S.A de C.V. {Hochschild Mining}	1
20366	MCR	Mineracao Corumbaense Reunida [MCR] (Brazil) {Vale S.A. [Vale] (Brazil)}	1
20367	MMX	Mineracao e Metalicos do Brazil Ltda [MMX] (Brazil)	1
20368	MOP	Mineracao Onca Puma [MOP] (Brazil)	1
20369	MPP	Mineracao Piramide Participacioes [MPP] (Brazil)	1
20370	MRN	Mineracao Rio do Norte [MRN] (Brazil)	1
20371	MBR	Mineracoes Brazileiras Reunidas [MBR] (Brazil)	1
20372	Mineral Commodities Ltd.	Mineral Commodities Ltd. [MRC] (Australia)	3
20373	Real Bonanza	Mineral Real Bonanza (Mexico) {First Majestic}	2
20374	MINOSA	Minerales de Occidente, S.A. [MINOSA] (Honduras)	1
20375	Minerales Libertad	Minerales Libertad (Mexico)	1
20376	Mineros SA	Mineros S.A (Colombia)	1
20377	Minnes Area Dvmpt Auth.	Minnes Area Development Authority (India)	1
20378	Minorte	Minorte (Brazil)	1
20379	Minvest	Minvest (Romania)	2
20380	Mitsubishi Corp.	Mitsubishi Corporation (Japan)	3
20381	Mitsui	Mitsui & Co., Ltd. (Japan)	4
20382	Mitsui Bussan Copper	Mitsui Bussan Copper Investment & Co. Ltd (Japan) {Mitsui & Co., Ltd. (Japan)}	1
20383	MRG	Mong Reththy Group [MRG] (Cambodia)	1
20384	Montana Exploradora	Montana Exploradora de Guatemala S.A. (Guatemala)	1
20385	Monterrico Metals	Monterrico Metals plc (United Kingdom)	1
20386	MCM	Mopani Copper Mines PLC (Zambia)	1
20387	Mosaic	Mosaic (USA)	1
20388	Motapa Diamonds	Motapa Diamonds (Canada)	1
20389	MPX	MPX Energia, grupo EBX	1
20390	Muriel	Muriel Mining Corporation (United States of America)	1
20391	Natexis Banques Populaires	Natexis Banques Populaires (Peru)	1
20393	NMDC	National Mineral Development Corporation [NMDC] (India)	1
20394	NTPC	National Thermal Power Corporation [NTPC] (India)	1
20395	Natural Stone Export Company	Natural Stone Export Company (Italy)	1
20396	Natural Stone Matabu	Natural Stone Matabu (Italy)	1
20397	Natural Stone Quarries	Natural Stone Quarries (Italy)	1
20398	Neepaz Metaliks	Neepaz Metaliks Pvt. Ltd. (India)	1
20399	New Gold	New Gold Inc. (Canada)	2
20400	Newmont	Newmont Mining Corporation (United States of America)	8
20401	Nickel Mountain AB	Nickel Mountain AB (Sweden) {IGE Resources AB (Sweden)}	1
20402	NMC	Nicolet Minerals Company [NMC]	1
20403	Nippon Mining	Nippon Mining and Metals Co. Ltd (Japan)	1
20404	Nirma Ltd	Nirma Ltd. (India)	1
20405	NOKIA	NOKIA (Finland)	1
20406	Noranda	Noranda (Canada)	1
20407	Norcarbon	Norcarbon (Colombia)	1
20408	Nordkalk	Nordkalk (Finland)	1

Id	Label	Names	Out-Degree
20409	Normandy Mining	Normandy Mining Company (Australia)	1
20410	North American Coal Corp.	North American Coal Corporation Ltd	1
20411	INB	Nuclear Industries [INB] (Brazil)	1
20412	Nyrstar	Nyrstar (Belgium)	1
20413	Oceana Gold	Oceana Gold Corp (Australia)	1
20414	OCL India Ltd	OCL India Ltd. (India)	1
20415	Octea Diamond Group	Octa Diamond Group (South Africa) {BSG Resources (South Africa)}	1
20416	Odebrecht	Odebrecht S.A. (Brazil)	1
20417	Chrifien des P.phates	Office Chrifien des Phosphates (Morocco)	1
20418	Omai Gold	Omai Gold Mines Limited [OGML] (Guyana) {Iamgold Corporation (Canada)}	1
20419	Omnia Minerios	Omnia Minerios Ltda (Brazil)	1
20420	OMX	OMX Operaciones Maritimas Ltda.	1
20421	Oracle Energy Corp.	Oracle Energy Corporation (Canada)	1
20422	Orion Ispat Ltd	Orion Ispat Ltd. (India)	1
20423	Orissa Sponge Iron Ltd	Orissa Sponge Iron Ltd. (India)	1
20424	Oro Barracuda	Oro Barracuda Limitada (Colombia)	1
20425	Oro East Mining	Oro East Mining (United States of America)	1
20426	Oro Gold Res.	Oro Gold Resources Ltd (Canada)	1
20427	Osisko Mining	Osisko Mining Corporation (Canada)	1
20428	Ozarslan Ltd.	Ozarslan Construction Mining Ltd. (Turkey)	1
20429	OZGEO	OZGEO (Russia)	2
20430	Ozturk Kardesler Ltd.	Ozturk Kardesler Construction Transportation Ind. Ltd. (Turkey)	1
20431	Pac Rim Cayman	Pac Rim Cayman LLC {Pacific Rim (Canada)}	1
20432	Pacific Rim	Pacific Rim (Canada)	4
20433	Pacific Rim El Salvador	Pacific Rim El Salvador S.A. (El Salvador) {Pacific Rim (Canada)}	1
20434	Pacific Wildcat Res	Pacific Wildcat Resource Corp. (Canada)	1
20435	Paladin Africa	Paladin Africa Limited (Malawi) {Paladin Energy Limited (Australia)}	2
20436	Paladin Energy Ltd	Paladin Energy Limited (Australia)	2
20437	Paladin Resources	Paladin Resources (Australia)	1
20438	Pan American Silver	Pan American Silver Corp. (Canada)	3
20439	Pan Pacific Copper	Pan Pacific Copper Co., Ltd. (Japan)	2
20440	Panem	Panem (India) {Punjab State Electricity Board (India)}	1
20441	Patagonia Gold	Patagonia Gold (Argentina)	1
20442	Paulson & CO	Paulson & CO	1
20443	Pawanjaya Sponge Iron	Pawanjaya Sponge Iron Ltd. (India)	1
20444	Pediment Gold	Pediment Gold (Canada) {Argonaut Gold}	1
20445	Penarroya Oxide SA	Penarroya Oxide S.A (France)	1
20446	Pershimco Res.	Pershimco Resources Inc. (Canada)	1
20447	Perubar SA	Perubar S.A. (Peru)	1
20448	Petaquilla Minerals	Petaquilla Minerals Ltd (Panama)	1
20449	Petra Diamonds	Petra Diamonds (United States of America)	1
20450	PDVSA	Petroleos de Venezuela South America [PDVSA] (Venezuela)	1
20451	Podzemlje Pece	Podzemlje Pece, Podjetje za razvoj turisti?ne in muzejske dejavnosti, d.o.o.	1
20452	Portal Resources	Portal Resources (Canada)	1
20453	POSCAN	POSCanada (Canada) {South Korean Pohang Steel Company [POSCO] (South Korea))}	1
20454	Potgietersrust Platinum	Potgietersrust Platinum Ltd (South Africa) {Anglo American Platinum (South Africa)}	1
20455	Prabhu Sponge Iron	Prabhu Sponge Iron	1
20456	PRC	PRC Potasio Rio Colorado SA (Argentina) {Rio Tinto}	1
20457	Prodeco	Prodeco	1
20458	Prominer Projetos	Prominer Projetos S/C Ltda (Brazil)	1
20459	PT Freeport Indonesia	PT Freeport Indonesia (Indonesia)	1
20460	PUC Komunalno Kotor	PUC Komunalno Kotor (Montenegro)	1
20461	Pueblo Viejo Dominicana Corp.	Pueblo Viejo Dominicana Corporation (Dominican Republic) {Barrick Gold Corporation (Canada)}	1
20462	Punjab State Electricity Board	Punjab State Electricity Board (India)	2
20464	QIT Madagascar Minerals	QIT Madagascar Minerals S.A. (Madagascar)	1
20465	QMM	QMM (Canada)	1
20466	Radius Gold	Radius Gold Inc. (Canada)	1
20467	Redki Metali	Redki Metali (Bulgaria)	1
20468	Reliance Anil Dhirubhai Ambani Group	Reliance Anil Dhirubhai Ambani Group (India)	1
20469	Reliance Ind.	Reliance Industries (India)	1
20470	Reliance Power	Reliance Power Ltd (India)	1
20471	Republic Gold Ltd	Republic Gold Limited (Australia)	1
20472	Revolution Res	Revolution Resources Corp (Australia)	1
20473	Rexon Strips Ltd	Rexon Strips Ltd (India)	1
20474	RBM	Richards Bay Minerals [RBM] (South Africa)	1

Id	Label	Names	Out-Degree
20475	Rimac	Rimac	1
20476	Rio Algom	Rio Algom Ltd []	1
20477	RDM	Rio Doce Mineracao [RDM] (Brazil) {Vale}	1
20478	RPMBrazil	Rio Paracatu Mineracao [RPM] (Brazil)	1
20479	Rio Tinto	Rio Tinto [Rio Tinto] (United Kingdom)	19
20480	Rio Tinto Alcan	Rio Tinto Alcan (Canada) {Rio Tinto [Rio Tinto] (United Kingdom)}	2
20481	Rio Tinto Minera Peru Ltd	Rio Tinto Minera Peru Limitada SAC (Peru) {Rio Tinto [Rio Tinto] (United Kingdom)}	1
20482	Rio Tinto Mining Colombia	Rio Tinto Mining and Exploration Colombia (Colombia) {Rio Tinto [Rio Tinto] (United Kingdom)}	1
20483	Rosia Montana Gold Corp.	Rosia Montana Gold Corporation (Canada)	1
20484	Royal Bafokeng Holdings	Royal Bafokeng Holdings (South Africa)	1
20485	Royal Bafokeng	Royal Bafokeng Nation (South Africa)	1
20486	RWE	RWE (Germany)	2
20487	Sabena	Sabena (Belgium)	1
20488	Saggitarius Mines	Saggitarius Mines (Philippines)	1
20489	Salazar Res.	Salazar Resources Ltd. (Ecuador)	1
20490	Salonit Anhovo	Salonit Anhovo (Slovenia)	1
20491	Mineracao de Amianto	Sama Sociedade Anonima Mineracao de Amianto (Brazil)	1
20492	San Luis Minerals	San Luis Minerals S.A. (Canada)	1
20493	San Rafael SA	San Rafael (Dominican Republic)	1
20494	Santa Luisa	Santa Luisa	1
20495	Sasan Power	Sasan Power Limited (India)	1
20496	Savia	Savia (Peru)	1
20497	Scan Sponge Iron Ltd	Scan Sponge Iron Ltd. (India)	1
20498	Scan Steels	Scan Steels Ltd. (India)	1
20499	Scaw Industries	Scaw Industries Pvt ltd. (India)	1
20500	SCC	SCC (Mexico)	1
20501	SCM Minera Lumina Copper	SCM Minera Lumina Copper (Chile)	1
20502	Scottish Coal	Scottish Coal (UK)	1
20503	Seafield Res.	Seafield Resources (Canada)	1
20504	Serbian Nickel DOO	Serbian Nickel DOO (Serbia)	1
20505	Servicios Selva Central	Servicios Selva Central	1
20507	Sesa Goa Ltd	Sesa Goa Limited (India) {Vedanta (UK)}	3
20508	Sesa Sterlite Ltd	Sesa Sterlite Limited (India) {Vedanta (UK)}	1
20509	Severstal	Severstal (Russia)	1
20510	Sherritt	Sherritt International Corporation (Canada)	1
20512	Shiv Shakti Sponge Iron	Shiv Shakti Sponge Iron Ltd. (India)	1
20513	Shougang Hierro Peru SA	Shougang Hierro Peru S.A. (China)	1
20514	Shree Metaliks	Shree Metaliks Ltd. (India)	1
20515	Shri Mahavir Ferro-Alloys	Shri Mahavir Ferro-Alloys (India)	1
20516	Shristi Ispat Ltd	Shristi Ispat Ltd.	1
20517	Silver Standard	Silver Standard Resources Corp. (Canada)	1
20518	SilverCorp	SilverCorp (Canada)	1
20519	SNC-Lavalin Inc.	SNC-Lavalin Incorporated (Canada)	1
20520	Soc Timblo Irmaos Ltd	Soc Timblo Irmaos Limited (India)	1
20521	Sociedad A&L Davila	Sociedad A&L Davila S. C. A (Colombia) {Grupo DAABON (Colombia)}	1
20522	Minera Vilacollo	Sociedad Contractual Minera Vilacollo (Chile)	1
20523	Sociedad Minera Aruri SA	Sociedad Minera Aruri S.A.C. (Peru)	1
20524	Minera Cerro Verde	Sociedad Minera Cerro Verde (Netherlands)	1
20525	El Brocal	Sociedad Minera El Brocal S.A. (Peru)	3
20526	Solvista	Solvista Gold Corp (Canada)	1
20527	Solway Inv.	Solway Investment Group (Russia)	2
20528	SOMAIR	SOMAIR {Areva (France)}	1
20529	Sony	Sony (Japan)	1
20530	South American Iron & Steel	South American Iron & Steel (Australia)	1
20531	POSCO	South Korean Pohang Steel Company [POSCO] (South Korea)	2
20532	South World	South World Consulting (Chile)	1
20533	SPCC	Southern Peru Copper Corporation (Peru) {Grupo Mexico (Mexico)}	5
20534	Spring Stone Explorations	Spring Stone Explorations Inc. (Canada)	1
20535	Spring Stone Ltd	Spring Stone Limited (Malawi)	1
20536	Sumitomo	Sumitomo Corporation (Japan)	3
20537	Sun He Mine	SUN HE MINE (China)	1
20538	Sundace Minerals	Sundance Minerals Ltd. of Vancouver (Canada)	1
20539	Sunshine Argentina	Sunshine Argentina Inc. (Argentina)	1
20540	Sunshine Silver	Sunshine Silver Mines	1
20541	Sunward Inv.	Sunward Investments Inc (Australia)	1
20542	Sunward Res. Ltd	Sunward Resources Ltd. (Canada)	1
20543	Suraj	Suraj Products Ltd. (India)	1
20545	Suryaa Sponge Iron	Suryaa Sponge Iron Ltd. (India)	1
20546	Swissair	Swissair (Switzerland)	1

Id	Label	Names	Out-Degree
20547	T.R. Chemicals	T.R. Chemicals	1
20548	Talvivaara	Talvivaara Mining Company (Finland)	1
20549	Taseko	Taseko Mines (Canada)	1
20550	Tata Group	Tata Group (India)	4
20551	Tata Sponge Iron	Tata Sponge Iron Ltd. (India) {Tata Group (India)}	1
20552	Tata Steel	Tata Steel (India) {Tata Group (India)}	2
20553	Teck Resources	Teck Resources Limited (Canada)	8
20554	Tempo Mining	Tempo Mining (Turkey)	1
20555	Tenke Mining	Tenke Minings (Canada)	1
20556	Termoelektrarna Sostanj	Termoelektrarna Sostanj d.o.o. (Slovenia)	2
20557	Ternium	Ternium (Luxembourg)	2
20558	SCG	The Social Capital Group (Canada) {Gran Colombia Gold (Canada)}	1
20559	Thiess Limited	Thiess India Private Limited (India)	1
20560	Thiess Minecs India	Thiess Minecs India Private Limited (India)	1
20561	ThyssenKrupp Res.	ThyssenKrupp Resource Technologies (Germany)	1
20562	Tiomin Res.	Tiomin Resources Inc (Canada)	1
20563	Tongling	Tongling Nonferrous Metals Group Holdings Co. Ltd. (China)	1
20564	Total	Total (France)	1
20565	Trafigura	Trafigura (Netherlands)	2
20566	TCTA	Trans-Caledon Tunnel Authority (South Africa)	1
20567	TEM	Transworld Energy and Minerals [TEM] (South Africa) {Mineral Commodities Ltd. [MRC] (Australia)}	1
20568	Traxys Europe SA	Traxys Europe SA (Luxembourg)	1
20569	Triton	Triton S.A. (Argentina)	1
20570	Tronox	Tronox (United States of America)	1
20571	Tujko	Tujko d.o.o. (Montenegro)	1
20572	Tuprag	Tuprag (Canada) {Eldoradogold}	1
20573	U3O8 CORP'S	U3O8 CORPS (Canada)	1
20574	UBRAJO	UBRAJO LTDA (Colombia)	1
20575	Ultramar	Ultramar (Chile)	1
20576	UCIL	Union Carbide India Limited [UCIL] (India)	2
20578	Uranium Corporation of India	Uranium Corporation of India Limited (India)	1
20579	UMSA	Urucum Mineracao [UMSA] (Brazil)	1
20580	Utkal Metaliks	Utkal Metaliks Ltd. (India)	1
20581	VM Salgaoncar & Bros	V M Salgaoncar & Bros Pvt (India)	1
20582	Valbuena Asociados	Valbuena Asociados (Colombia)	1
20583	Valderrama Saveedra Juan Orlando	Valderrama Saveedra Juan Orlando (Peru)	1
20584	Vale Mozambique	Vale Mozambique (Brazil) {Vale S.A. [Vale] (Brazil)}	1
20585	Vale	Vale S.A. [Vale] (Brazil)	17
20586	Vattenfall Europe	Vattenfall (Sweden)	5
20587	Vattenfall Mining AG	Vattenfall Europe Mining AG (Germany)	5
20588	Vecchiola	Vecchiola (Chile)	1
20589	Vedanta	Vedanta (United Kingdom)	6
20590	Sterlite	Sterlite Ltd {Vedanta (UK)}	1
20591	Vista Gold	Vista Gold (United States of America)	3
20592	Volcan	Volcan (Peru)	3
20593	Votorantim	Votorantim Metais (Brazil)	1
20594	VTG Nickel Holding	VTG Nickel Holding (Turkey)	1
20595	W&R Dinamic	W&R Dinamic Company (Montenegro)	1
20596	Wiese Sudame	Wiese Sudameris Leasing S.A. (Peru)	1
20597	Wildhorse Energy Hungary Termel s Szolgltat Kft.	Wildhorse Energy Hungary Termel s Szolgltat Kft. (Hungary)	1
20598	Wildhorse Energy Ltd.	Wildhorse Energy Ltd. (Australia)	1
20599	WTR	World Titanium Resources Ltd [WTR] (Australia)	1
20600	WISCO	Wuhan Iron & Steel Co [WISCO] (China)	1
20601	Xolco	Xolco (South Africa) {Mineral Commodities Ltd. [MRC] (Australia)}	1
20602	Xstrata Copper	Xstrata Copper (Switzerland) {Glencore-Xstrata (Switzerland)}	4
20603	Yamana Gold	Yamana Gold Inc. (Canada)	3
20604	Yamiri	Yamiri S.A. (Argentina)	1
20605	Yara Brazil Fertilizantes	Yara Brazil Fertilizantes S.A (Norway)	1
20606	Yauliyacu	Yauliyacu	1
20607	Yildirim Holding	Yildirim Holding (Turkey)	1
20608	Zamin Ferrous	Zamin Ferrous	1
20609	ZIMASCO	ZIMASCO (Zimbabwe)	1
20610	Zijin Consortium	Zijin Consortium (China)	1
20611	Zimbabwe Mining Development Corp.	Zimbabwe Mining Development Corporation (Zimbabwe)	1

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