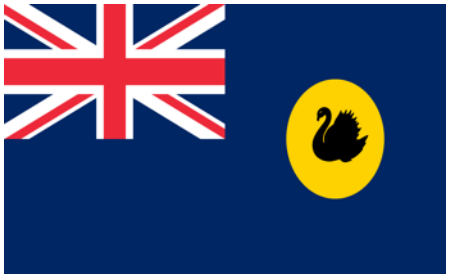
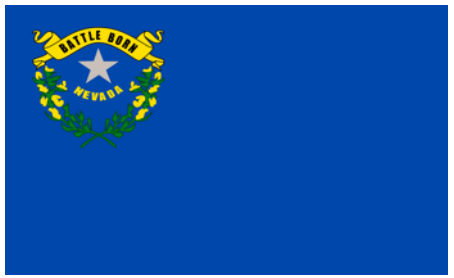
Water-related regulatory and social risks in the mining sector

Legal review of 12 jurisdictions





Semi-structured interviews with 10 mining company representatives

ANGLOGOLD ASHANTI

GLENCORE

ANGLO AMERICAN

NEWMONT

goldcorp

RioTinto

KINROSS

Legal Review : Water Allocation

- Basis
- Community
- Length
- Changes
- Markets
- Processing times
- Tariffs

Legal Review : Water Discharge & Enforcement

- Permits
- Post-mining
- Enforcement
- Reporting

Risk Perception by Company Representatives

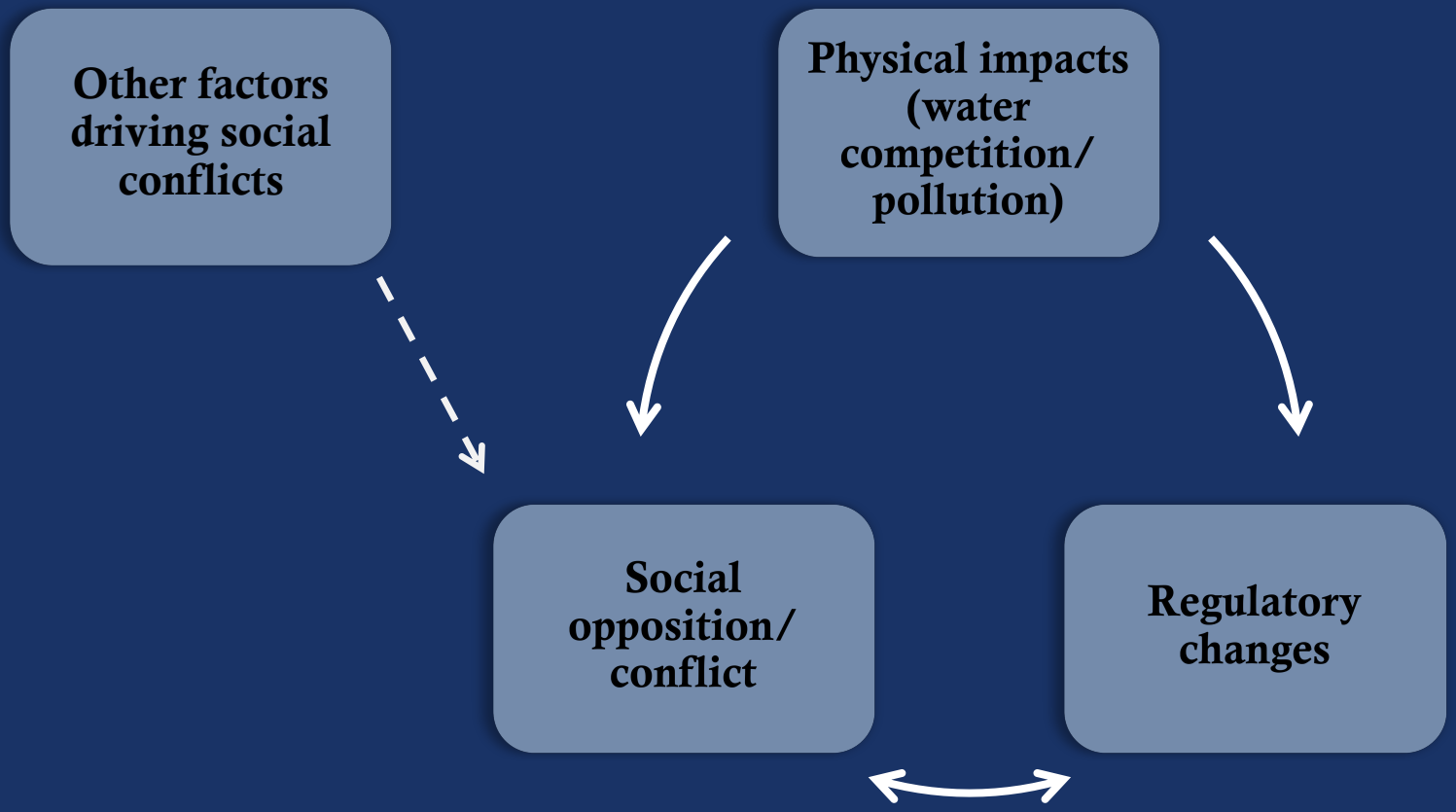
- Not related to legal framework
- Predictability is key =
  - Timeliness of being processed
  - Probability of being granted
  - Likelihood of contestation

Common Trends/Observations

- Enforcement rather than strength of the regulation is a bigger driving factor for risk.

Allocation mechanisms	• Closely linked to the relevant countries' legal tradition
Administration responsibility	• Depending on the level of decentralization
Legacy pollution problems	• More stringent discharge and post-closure requirement
Water scarce jurisdictions	• More stringent water allocation regimes & markets to trade water rights

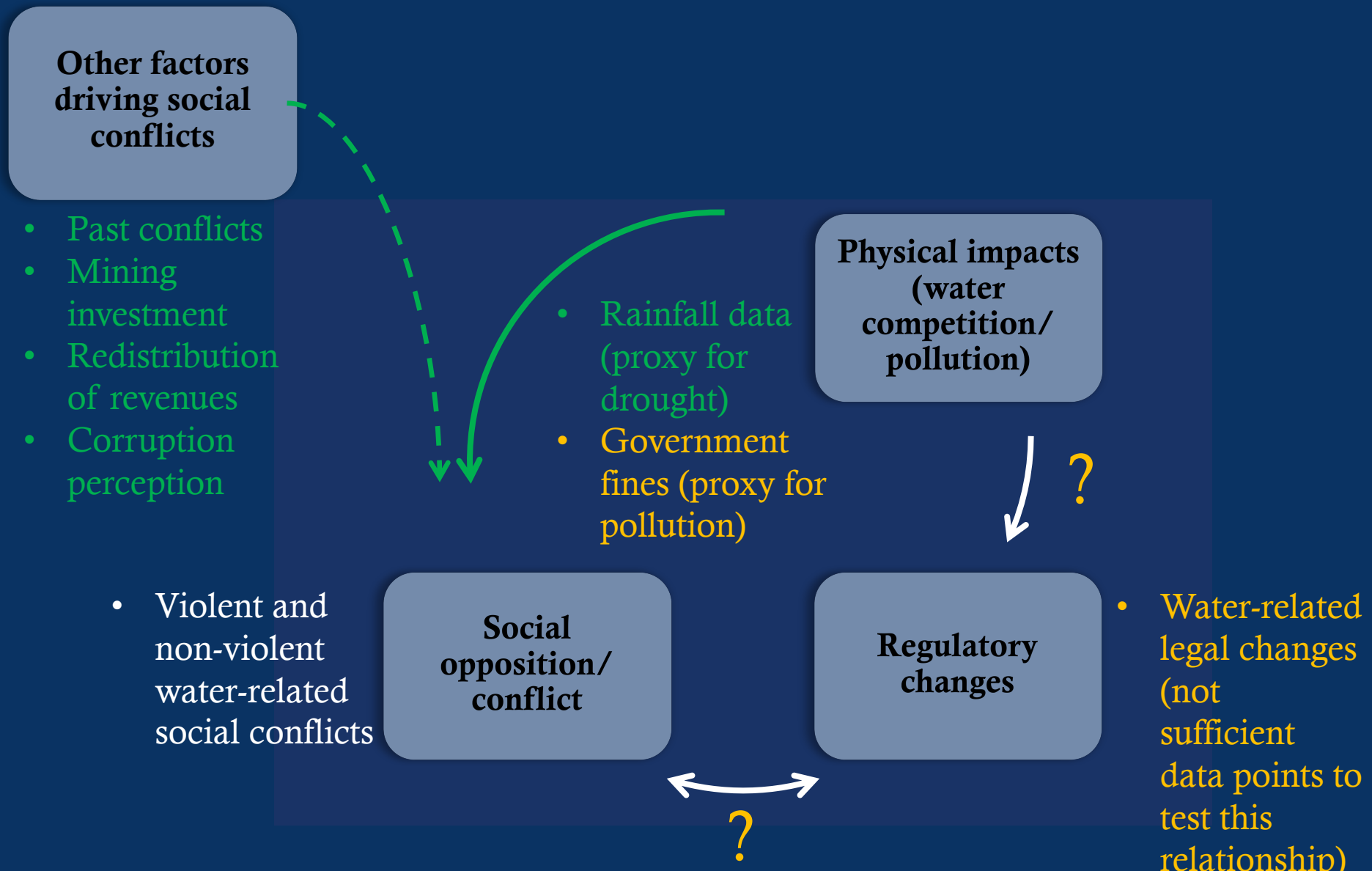
Water-related social conflicts in the mining sector: Hypothesis



Peru Case Study

- Peru was chosen as a case study given the availability of social conflict data ranging from 2007-2016.
- 20 variables were compiled to test the factors driving mining conflicts that were characterized as being water-related in the database.
  - Water related indicators included rainfall data (as a proxy for water access) and fines from the Government for non-compliance (as a proxy for water pollution)
- Regulatory changes to the water legislation were recorded during the time period.
- A Generalized Linear Model and Hierarchical Bayesian Regression Model were built to run national and regional assessments.

Peru Case Study: Results



Findings and Recommendations

Past conflicts is the most important indicator for future conflicts	• Up-front consultations and involvement of affected communities to be improved in company strategies and regulations.
Larger mining investments increases the likelihood of conflict	• Industry rather than company or project specific problem and as such needs industry wide solutions.
Throwing money at the problem does not necessarily solve conflicts	• Need to partner redistribution with inclusive decision making processes, local capacity building, transparency and oversight to ensure the funds are spent efficiently.

Findings and Recommendations

Drought is a concern and source of conflict	• Shared-water infrastructure solutions whereby mining-related infrastructure development is leveraged to benefit broader needs can be a model to address this risk.
Water quality degradation does not emerge as a factor	• However, data source for this indicator was weak • Opportunity for further research

Outputs

Columbia Center on Sustainable Investment
A JOINT CENTER OF COLUMBIA LAW SCHOOL AND THE EARTH INSTITUTE, COLUMBIA UNIVERSITY

Water Risks in the Mining Sector Peru[1]

As of August 2016

1. Overview

Peru is the world's second largest producer of copper, after Chile, and holds the second-largest known copper reserves. It is also the second largest producer of silver, and the sixth largest global producer of gold. The country also has significant reserves of coal, iron ore, silver, tin, sulfur and zinc.

Peru's legal system: Peru's legal system is based on civil law tradition. According to its Constitution, Peru's form of government is "unitary, representative, and decentralized." As a mandatory, continued policy of the state, decentralization is carried out in stages to ensure the proper distribution of jurisdictions and transfer of resources from the national government to local and regional governments. Pursuant to the decentralization process, mining, water and environmental issues are primarily regulated at the national level, while small and artisanal-scale mining is regulated at the regional level.[2] Local governments may also enact mining regulations applicable in their respective jurisdictions, as long as such regulations are not in conflict with national laws and regulations.

Water allocations and discharge permits: Contrary to Chile and many other jurisdictions, all water is public property in Peru and water rights permitting the use of water are not considered to be property rights that allow for the transfer or mortgaging of such rights.

Water licenses and discharge authorizations for mining operations are currently granted by the applicable local branch of the National Water Authority (ANA) and are valid until mining operations cease. While the time period to obtain the water license or discharge permit is relatively short, the time it takes to obtain the requisite environmental certification required to be submitted as part of the water license application can take 1-2 years to prepare and obtain. Until late 2015, all environmental certifications (which approve the required environmental impact study) for the mining sector were granted by the General Directorate of Mining Environmental Affairs (DGAAM), a body of the Ministry of Energy and Mines. However, recent legislative changes now require large-scale mining projects that require a Category III Detailed

[1] This project was managed by CCSI Senior Legal Researcher, Sophie Thomashausen. Research was conducted by Sophie Thomashausen, Joanna Eileen Capones and Kristina Hamil. The authors are also grateful to Sandra Orihuela for her helpful insights.
[2] Fernando Pickmann, "Peru: Mining 2016", *Latin Lawyer*, available at: http://latinlawyer.com/reference/topics/46/jurisdictions/19/peru/.

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A comparative overview of legal frameworks governing water use and waste water discharge in the mining sector

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ABSTRACT

Mining operations require access to a secure and stable water supply. Obtaining water use and discharge licenses has become increasingly challenging for mining companies in many resource rich jurisdictions. This can be attributed in part due to competing water uses in water scarce regions and pollution caused by existing and legacy mines. This report provides a comparative review of the water management regulatory frameworks of some of the largest gold and copper producing jurisdictions. The jurisdictions reviewed include Australia (Western Australia), Canada (British Columbia), Chile, China, Peru, the Philippines, South Africa, and the United States (Alaska, Arizona, Nevada and New Mexico). Interviews of mining company representatives working on water management issues complement the legal review to highlight the perceived regulatory risk by investors of the analyzed jurisdictions.

1. Introduction

Mining is increasingly associated with water risk – both in terms of water access and surrounding water quality. This is especially so where mines operate in water scarce regions, or upstream of communities that rely on the same water source for consumption or agriculture. Water impacts are also increasingly at the center of social conflicts between local communities and mining companies. In turn, the civil unrest surrounding mines has begun to shape legal frameworks governing water use and waste discharge to varying degrees.

As part of a three-year project – in collaboration with the Water Center at Columbia University and support by Norges Bank Investment Management (NBIM) – to assess water related risks in the copper and gold mining sector, the Columbia Center on Sustainable Investment (CCSI) has reviewed the laws and regulations governing water use and discharge by mining operations in 12 jurisdictions in 8 countries, namely Australia (Western Australia), Canada (British Columbia), Chile, China, Peru, the Philippines, South Africa, and the United States (Alaska, Arizona, Nevada and New Mexico). The jurisdictions reviewed were chosen for two reasons: 1) they each produce significant volumes of gold and/or copper, and 2) together, they provide a diverse and comprehensive basis for comparison from both a geographical and a legal perspective. In this regard, note that while Russia is a top gold and copper producing country, it was excluded due to language barriers. To conduct the review process, a standard template was designed and completed for each jurisdiction on the basis of desk research and interviews with legal, mining and water experts. The main categories assessed in each review included the legal framework governing water-use, water quality and discharge, monitoring requirements, post-mine closure requirements, and enforcement mechanisms. Readers interested to learn more about a particular jurisdiction reviewed for this project can access all jurisdictional reports.[1] This paper provides a comparative summary of these legal frameworks in the Annex. In so doing, it provides insight into the different approaches jurisdictions have taken to manage their water resources.

The quality of a law alone is not necessarily indicative of the level of risk associated with water use in any one country. Political or administrative discretion, respect for the rule of law, and the capacity of a state to monitor and enforce water and environmental regulations are often crucial factors for determining investment risk related to water use by mining companies. To incorporate some of these factors, the study also included interviews of ten mining company representatives working in water-management or related positions within the jurisdictions analyzed. The interview questions broadly followed the categories of the legal template. They aimed to understand how these regulations translate into practice and what these practices' consequences are for mining companies. The interviewees all worked for large international gold and copper companies at the time of the interview – a prerequisite for the selection process – with some having worked in multiple countries. Key points from the interviews are

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[1] http://ccsi.columbia.edu/work/projects/assessing-water-related-risks-in-the-mining-sector/reports

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- [Legal frameworks of 12 mining jurisdictions]
- [Comparative overview published in the Resources Policy Journal]
- "An Analysis of Peru: Is water driving mining conflicts?" study (currently in peer review and to be published shortly)
- All data points collected and compiled for the Peru case study.