



## Introduction

### Background and Relevance

The Lithium Triangle sits in the Andean Plateau region of Argentina, Chile, and Bolivia. **60% of the world's known lithium reserves** are contained within a subterranean brine found beneath the regions high-altitude salt flats, known as salars.

The current energy transition has increased the market demand for lithium, which is the primary component of lithium-ion batteries, used in most electronic devices and in notably large quantities in electric vehicle batteries.

Country	Governance Mechanism
Argentina	Provincial jurisdiction with international investment and operations
Bolivia	Monopolistic state ownership and control
Chile	State-subcontracted private operations (CORFO-led)

Figure 1: The mining management models within in the Lithium Triangle (Cuahutencos 2024).

### Recent Technological Advancements

Historically, lithium carbonate has been extracted by pumping lithium brine into surface evaporation pools where it sits for **12-24 months** before it is ready to be processed. The evaporation method is only **40-60% effective** at extracting the present mineral (McBride et al. 2025).

	Evaporation	DLE
Processing Time	12-24 months	24 hours
Percent Yield	40-60%	90-99%
Water Use Per Tonne of Lithium	~51 m <sup>3</sup>	~135 m <sup>3</sup>

Figure 2: Comparison of the efficacy of evaporation and direct lithium extraction (DLE) methods (Diaz Paz et al 2025).

## Key Findings

While driving the global energy transition, lithium extraction in the 'Lithium Triangle' imposes disproportionate costs on water and indigenous rights while deepening strategic dependence on Chinese-dominated supply chains.



Figure 3: The Lithium Triangle with major and minor lithium mining projects. Tier 1 mining projects generate over \$300 million USD annually, have lithium reserves to sustain 20+ years of operations, and sit in the bottom quartile of the global mining cost curve (Schodde 2013).

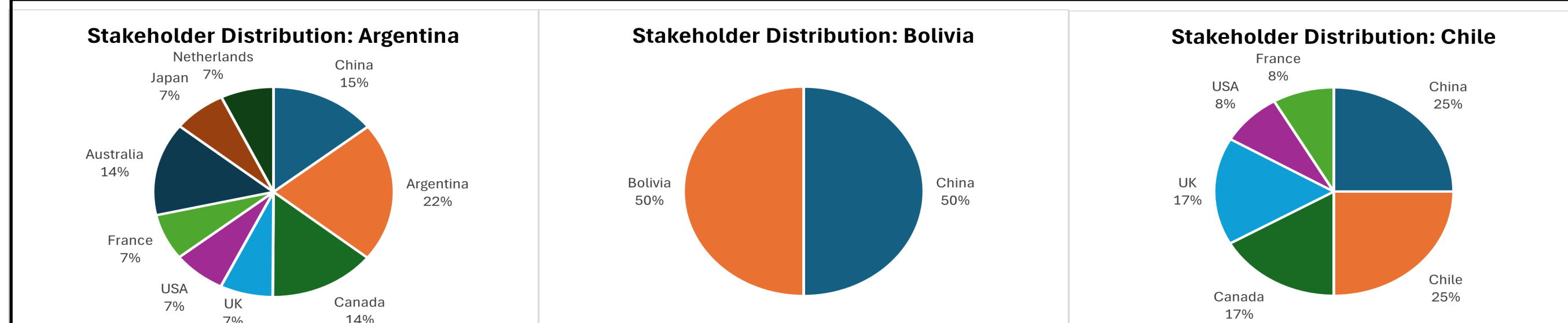


Figure 4: Shareholder distribution of lithium mining projects in the Lithium Triangle.

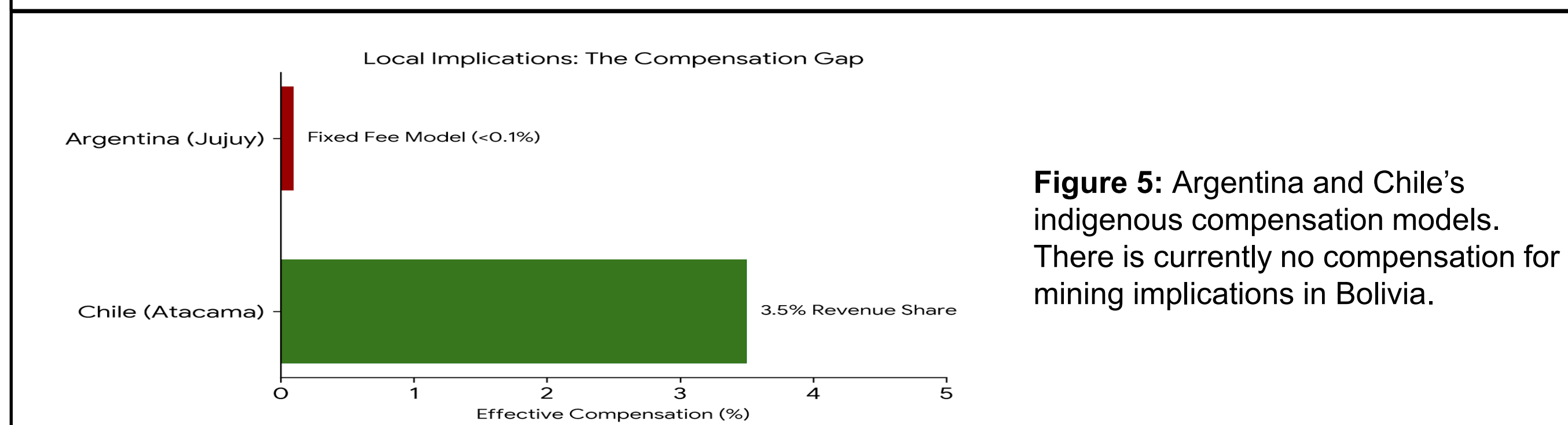


Figure 5: Argentina and Chile's indigenous compensation models. There is currently no compensation for mining implications in Bolivia.

## Geopolitical Implications: Chinese Control of Lithium Production

While China is a major stakeholder in the major lithium mining projects in the Lithium Triangle, its true control over the lithium market is derived from its lithium refining and EV batteries production capabilities. Currently, **China processes 80% of the world's raw lithium and produces 60% of the world's EV batteries** (Arulanantham 2026).

China's dominance in refining and battery production may create strategic dependencies for other states during periods of market disruption or geopolitical tension.

## Local Implications: Indigenous People and Water Rights

The increased prevalence of DLE-based mining projects and consequently an increase in water usage has sparked outrage over its impact on indigenous people. Predominately agrarian **villages within the Lithium Triangle are losing their livelihood** as the water table is dramatically lowered by **overuse of water by mining projects**. Despite the significant impact of the lithium mining on their livelihood, indigenous people in Argentina, Bolivia, and Chile receive minimal financial compensation, sparking legal battles between the nations and indigenous advocacy groups.

## Phase I Methods

This research utilized a synthesis of 34 primary and secondary sources, identified through a generative AI search of academic databases, salient court cases, and international NGO reports. The analysis centers on 3 major and 11 minor mining projects across the region.

## Next Steps

Develop this literature review into a case study examining how water stress, indigenous rights, and international competition shape lithium governance in the region.

## References

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