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What Are the Success Factors for a Just Transition in Critical Mineral Extraction? Analysis From the Lithium Triangle

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Abstract

The scramble to extract critical energy transition minerals creates risk of widespread negative human rights impacts. A just transition in the extraction of critical minerals must involve deep examination of the mine-community interface to gain a better understanding of the drivers of successful engagement between mining companies and communities. Drawing on fieldwork in South America's lithium triangle, this paper finds that the nature of the corporate-community relationship is increasingly key to enabling a just transition whereby communities participate in the benefits of extraction with negative impacts mitigated. It establishes that key success factors are related to empowerment of Indigenous communities and have the potential to maximise positive outcomes for communities in the context of lithium extraction. Governments and companies must embed a more bottom-up process with an end goal of communities themselves defining the parameters of what a just transition means in the critical minerals context.

Keywords: just transition; critical minerals; Indigenous rights; lithium; human rights; FPIC (free, prior and informed consent)

I. Introduction

Climate change is already causing widespread and significant impacts across the globe, ranging from the acute impacts of extreme weather events to the chronic impacts of rising sea levels, desertification and biodiversity loss. While climate change is often framed in environmental terms, it is clear from the actual and potential negative impacts on people that it represents a vast challenge from a human rights perspective and perhaps even an existential threat to the entire human rights system.

The need to decarbonize the global economy is therefore a critical one in human rights terms. However, as renewable energy projects are rolled out at scale across the globe and the sale of electric vehicles ramps up, the scramble to secure supply of minerals critical to the manufacture of renewable energy technology is intensifying, with new mines being prospected and developed, existing mines being expanded, and legacy or nonviable former projects being reopened as rising mineral prices render lower quality orebodies increasingly exploitable.[1]

[1] JHM Harmsen, AL Roes and MK Patel, 'The Impact of Copper Scarcity on the Efficiency of 2050 Global Renewable Energy Scenarios' (2013) 50 *Energy* 62.

This rapid expansion of extractive activity in the context of minerals critical for energy transition has significant consequences for human rights. The impacts both negative and positive of mining on the human rights of workers and local communities have been extensively discussed in the literature.[2] The expansion of existing mines is likely therefore to increase those impacts, while exploitation of lower-quality orebodies leads to proportionally greater impacts as greater quantities of rock must be mined to produce the same mineral output. The search for new deposits of lithium, cobalt, copper and more will mean an increase in impacts as formerly unexploited areas are targeted for mining. It has been calculated, for example, that 54 per cent of mines extracting critical minerals will be on or near Indigenous territories.[3] Additionally, states are increasingly conscious of the need for energy security, meaning mining will be taking place in a growing number of countries which have not in recent years seen significant extractive activity.[4]

The necessary conclusion is that, while the energy transition is crucial in human rights terms, it is also creating conditions for potentially widespread negative impacts on human rights in the context of the extraction of minerals that are necessary inputs into renewable energy technologies. These impacts include violations of labour rights and land rights, operational impacts on the rights to health and life and environmental impacts with significant effects on Indigenous procedural and other human rights and implications for a series of economic, social and cultural rights.

For example, the incidence of child labour and unsafe working conditions in the artisanal mining of cobalt, a key input for the lithium-ion batteries that power electric vehicles and store renewable energy, has been widely publicized.[5]d The mining of nickel and copper, which will be required in huge quantities to realize the energy transition[6] is associated with severe impacts on the environment and human health,[7] and further rights concerns are attached to the extraction of many more of the minerals crucial to the manufacture of renewable energy technology.[8]

However, there is also an opportunity for positive impacts on rights. While the United Nations Guiding Principles on Business and Human Rights (UNGPs) clearly underline that any

[2] E.g., Jonathan Drimmer, 'Human Rights and the Extractive Industries: Litigation and Compliance Trends' (2010) 3(2) *Journal of World Energy Law & Business* 121; Isabel Feichtner, Markus Krajewski and Ricarda Roesch (eds.), *Human Rights in the Extractive Industries: Transparency, Participation, Resistance* (Springer, Cham, 2019); Jerry K Jacka, 'The Anthropology of Mining: The Social and Environmental Impacts of Resource Extraction in the Mineral Age' (2018) 47(1) *Annual Review of Anthropology* 61.

[3] John R Owen et al, 'Energy Transition Minerals and Their Intersection with Land-Connected Peoples' (2023) 6(2) *Nature Sustainability* 203.

[4] Attila Kálmán and Amund Trellevik, 'Green Transition, Dirty Business: Europe's Struggle to Tear Loose from Chinese Minerals,' *Investigate Europe*, https://www.investigate-europe.eu/posts/green-transition-mines-metals-minerals-china-europe.

[5] Amnesty International, *Time to Recharge: Corporate Action and Inaction to Tackle Abuses in the Cobalt Supply Chain* (2017); Dorothée Baumann-Pauly, *Cobalt Mining in the Democratic Republic of the Congo: Addressing Root Causes of Human Rights Abuses* (NYU Stern and University of Geneva, February 2023).

[6] International Energy Agency, *The Role of Critical Minerals in Clean Energy Transitions* (March 2022).

[7] Business & Human Rights Resource Centre, *Transition Minerals Tracker: 2022 Analysis* (June 2023), https://media.business-humanrights.org/media/documents/2023_Transition_Minerals_Tracker_JX5pGvf.pdf.

[8] Ibid. While this report focuses on the automotive supply chain, the implications for aluminium in renewable energy are striking: Laura Murphy et al, *Driving Force: Automotive Supply Chains and Forced Labor in the Uyghur Region* (Sheffield Hallam University Helena Kennedy Centre for International Justice, December 2022), https://www.shu.ac.uk/helena-kennedy-centre-international-justice/research-and-projects/all-projects/driving-force.

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positive impacts of business on human rights cannot compensate for negative ones,[9] it is important to emphasize that certain human rights would not be able to be effectively realized in today's world without companies. Because of their scale and the direct nature of their impacts on the environment and local communities, mining companies are often in a position to make a significant contribution to rights via such pathways as employment, procurement, benefit-sharing and community development. Corporate respect for Indigenous human rights such as the right to free, prior and informed consent (FPIC) can have a significant knock-on positive impact on other rights such as the right to self-determination.[10]

Leaving to one side the broader rights context—the avoidance and mitigation of the negative impacts of climate change on human rights that the energy transition is so crucial for—it is evident that the shift away from fossil fuel extraction and the increased extraction of critical minerals that is taking place creates not just an urgent need to foresee, avoid and mitigate negative impacts, but a huge opportunity to do things better and plan extraction in a way that maximizes positive rights impacts.

This paper analyzes what a just transition would need to encompass in the context of the lithium triangle. It begins with an analysis of the dimensions of just transition, highlighting the crucial need to include consideration of impacts on the 'transition to' side of the equation and arriving at a working definition of the concept. It then discusses the nature of brine extraction of lithium in the lithium triangle and sets out a framework for analyzing just transition in the region. Three key dimensions—minimization of negative impacts, maximization of positive impacts, and equitable distribution of benefits—are then analyzed in detail. A discussion of success factors and a conclusion follow.

Much of this paper is informed by fieldwork in the lithium triangle and the resulting analysis, which were part of a doctoral research project investigating the key intersecting factors shaping corporate engagement with Indigenous communities and their rights in the lithium triangle.[11] The fieldwork was conducted between 2019 and 2021, principally in Argentina and Chile, which were visited on three research trips.[12] It involved interviews with a total of 59 different participants. Six interviews were conducted online, the rest in person. Interviews were conducted in either Spanish or English. Interviewees included members of Indigenous communities, employees of mining companies, government officials, academics, industry experts, representatives of nongovernmental organizations (NGOs) and other civil society actors. There was an even gender spread across all of those sectors and a wide range of ages were represented.

Interviews were semistructured and mostly around an hour long, although interviews as short as 15 minutes and as long as 150 minutes were conducted. Potential interviewees were identified via online research, facilitation of Indigenous community and civil society organizations, personal recommendations and snowball sampling (whereby study participants refer the researcher to further potential participants). Interviews were transcribed and coded under a series of thematic topics by the author.[13]

[9] United Nations Office of the High Commissioner for Human Rights, *Guiding Principles on Business and Human Rights: Implementing the United Nations 'Protect, Respect and Remedy' Framework* (2011) 11, https://www.ohchr.org/sites/default/files/documents/publications/guidingprinciplesbusinesshr_en.pdf.

[10] Andy Symington, *Landscapes of Transition: State, Company and Indigenous Community Human Rights Dynamics in South America's Lithium Triangle* (UNSW Sydney, 2023) 7.4, https://unsworks.unsw.edu.au/entities/publication/9349e78a-c65d-497c-9cba-1e352a8af24d/full ('*Landscapes of Transition*').

[11] See Symington, note 10.

[12] The lithium triangle includes parts of Argentina, Bolivia and Chile and the project was designed to include empirical research and analysis of all three. However, travel restrictions suddenly imposed by the COVID-19 pandemic meant that fieldwork in Bolivia could not be conducted, so the empirical data are regrettably confined to Argentina and Chile.

[13] For a breakdown of interviewees by category, see Symington, note 10, 9.3.

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II. Just Transition

The term 'just transition' was originally coined in the North American labour rights movement in the 1990s, where it referred to the need to align worker union goals for employment with environmental considerations.[14] In recent years it has been increasingly invoked by governments, policymakers and civil society, partly in the wake of its inclusion in the Paris Agreement.[15] This increasing discourse has usually been focused on the context of the rights of those people and communities negatively impacted by the move away from fossil fuels.[16]

For example, the closure of a coal mine has significant impacts on workers who lose their jobs and people involved in businesses that directly service the mine, with knock-on effects on families, other businesses and the whole community. Just transition in this scenario means avoiding, mitigating and compensating for negative impacts on people caused by the transition away from coal, and ensuring that the benefits and opportunities of the transition to renewables are also distributed to those it would otherwise have left behind. Just transition planning has been undertaken in several regions formerly dependent on fossil fuels,[17] including prioritising those areas for renewables projects. This has obvious advantages and leverages existing transmission infrastructure, but, despite a global net employment gain as renewables are rolled out, locally this can be harder to achieve.[18]

The increasing discourse around just transition has resulted in a multitude of definitions of it, some succinct and some running to many pages. Importantly, many of the definitions focus solely or predominantly on the 'transition away from' context just discussed, i.e., the impacts of closure, particularly on jobs.[19] This is perhaps due to the labour rights origins of the term and the prominent role of unions and labour organizations in defending the rights of workers in this context.

It is clear, however, from the above examples, which are expanded on in the context of solar energy below, that the transition 'to' side of the equation, i.e., the shift to renewables itself, also has significant potential negative impacts on rights, many of which are potentially more widespread, longer lasting and less remediable. It is crucial therefore that we also consider just transition in the context of renewable energy technology and infrastructure in order to ensure that we are not creating a future where the benefits of the energy transition accrue to the powerful economies of the global North states, while the risks and negative impacts are effectively 'offshored' to the global South states and the most vulnerable (the 'South in the North'[20]) within them. It emphasizes the 'importance of not continuing to sacrifice the wellbeing of vulnerable groups for the sake of advantaging others, as has been the norm in past transitions.'[21]

[14] E3G, *A Just Transition for All of Just a Transition?* (November 2018) 3, https://www.e3g.org/wp-content/uploads/DiscussionPaper_GlobalJustTransition_E3G_November2018.pdf.

[15] *Paris Agreement to the United Nations Framework Convention on Climate Change 2015* ('*Paris Agreement*').

[16] E.g., World Benchmarking Alliance, *Just Transition Methodology* (2021); International Labour Organization, *Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies for All* (2015).

[17] E.g., Government of Victoria, *Gippsland 2035: Latrobe Valley and Gippsland Transition Plan*, https://lva.vic.gov.au/transition/plan/Latrobe-Valley-and-Gippsland-Transition-Plan-DRAFT-as-at-15-March-2023.pdf.

[18] International Renewable Energy Agency, *Finding Common Ground for a Just Energy Transition: Labour and Employer Perspectives* (2023) 11–22.

[19] For example, the ILO definition: https://www.ilo.org/regions-and-countries/europe-and-central-asia/eastern-europe-and-central-asia/areas-work/enterprises-development/green-jobs-and-just-transition-eastern-europe-and-central-asia.

[20] Antony Anghie, 'Rethinking International Law: A TWAIL Retrospective' (2023) 34(1) *European Journal of International Law* 7, 74.

[21] Pinker, cited in Alfred Love, 'A Just Energy Transition through the Lens of Third World Approaches in International Law' (2023) 21(2) *Opolskie Studia Administracyjno-Prawne* 9, 33.

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This is particularly critical given that scholars have noted that the energy transition is required largely because of past industrialization and resource extraction by colonial states[22] and therefore must include consideration of 'the principle of ecological debt owed to vulnerable communities'[23] in the Global South. The international climate change negotiations and decarbonization agenda are still characterized by a significant North-South divide,[24] meaning that for a transition to be just, it must also be transformative of the existing structures that propagate inequitable outcomes.

While this paper focuses on the extraction of transition minerals, it is important to understand that risks manifest at every stage of the supply chain and throughout the lifecycle of renewable energy technology. Examples of such distinct domains of risk and impact in the context of solar power include:

A. *Mining and Extraction of Mineral Inputs to Solar Panels, Inverters and Batteries*

As mentioned above, the tendency of the extractive industries globally to impact negatively on human rights has been extensively documented. The ongoing rollout of solar energy technology will lead to increased demand for a number of mineral inputs,[25] with increased risks and impacts on human rights as discussed in the introduction. An example is environmental damage impacting water, livelihoods and potentially various Indigenous human rights in brine lithium extraction.[26]

B. *Refining and Processing of Mineral Inputs*

The refining and processing of raw materials is also an area of noteworthy human rights risk and impact. The impacts of refining bauxite into alumina have been particularly highlighted.[27] In the context of batteries, there are also significant health risks from pollution in graphite processing.[28]

C. *Manufacturing*

Human rights risks and impacts in manufacturing, particularly those related to labour rights, are a key focus of business and human rights initiatives such as those concerned with

[22] Anghie, note 20, 73.

[23] Kishan Khoday, 'Decolonizing the Environment: Third World Approaches to the Planetary Crisis Third World Approaches to the International Law' (2021) 19(2) *Indonesian Journal of International Law* 189, 200.

[24] Anghie, note 20, 75.

[25] Guiomar Calvo and Alicia Valero, 'Strategic Mineral Resources: Availability and Future Estimations for the Renewable Energy Sector' (2022) 41 *Environmental Development* 100640.

[26] Wenjuan Liu, Datu B Agusdinata and Soe W Myint, 'Spatiotemporal Patterns of Lithium Mining and Environmental Degradation in the Atacama Salt Flat, Chile' (2019) 80 *International Journal of Applied Earth Observation and Geoinformation* 145; Pia Marchegiani, Jasmin Höglund Hellgren and Leandro Gómez, *Lithium Extraction in Argentina: A Case Study on the Social and Environmental Impacts* (Fundación Ambiente y Recursos Naturales [FARN], 2019).

[27] Anne Merrild Hansen et al, 'Social Impacts of Bauxite Mining and Refining: A Review' (2023) 14 *The Extractive Industries and Society* 101264; Jim Wormington, 'Aluminum: The Car Industry's Blind Spot' (2021) *Human Rights Watch*, https://www.hrw.org/report/2021/07/22/aluminum-car-industrys-blind-spot/why-car-companies-should-address-human-rights.

[28] Oeko Institut, *Environmental and Socio-Economic Challenges in Battery Supply Chains: Graphite and Lithium* (July 2020).

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modern slavery (e.g., Anti-Slavery International, Walk Free Foundation)[29] and emerging legislation such as the European Union (EU) Corporate Sustainability Due Diligence Directive (CSDDD).[30] Labour rights risks in the manufacture of solar panels have been the object of significant recent scrutiny.[31] The high amount of energy used in the manufacturing process[32] also has human rights implications if it is generated from fossil fuels and therefore contributes to the impacts of climate change.

D. Transport

The transport sector is widely seen as a key area of labour rights risk[33] and has intersections throughout the solar supply chain and project lifecycle, including the transport of panels from their place of manufacture to the customer and then to the construction site. A key example is the risk of modern slavery in global shipping.[34]

E. Planning and Construction

Large solar farms have a large land footprint, which can be many times greater than that of a mine.[35] This can have significant implications for access to land, water and food, particularly in the context of Indigenous land rights.[36] Issues associated with construction include labour rights risks in some jurisdictions as well as impacts on local communities from noise, dust and temporary population increases.

F. Operations

While solar panels do not have the operational impact of a mine, the need for regular cleaning of panels to maintain operational efficiency has raised questions about the impact on water for nearby communities[37] and could also raise labour rights questions in some jurisdictions. Another example is that the impact of solar farms on arable land can affect the right to food.[38]

[29] www.antislavery.org, www.walkfree.org

[30] E.g., Directive (EU) 2024/1760 of the European Parliament and of the Council of 13 June 2024 on Corporate Sustainability Due Diligence and Amending Directive (EU) 2019/1937 and Regulation (EU) 2023/2859Text with EEA Relevance 2024 ('CSDDD').

[31] Laura T Murphy and Nyrola Elimä, *In Broad Daylight: Uyghur Forced Labour and Global Solar Supply Chains* (Sheffield Hallam University Helena Kennedy Centre for International Justice, 2021).

[32] International Energy Agency, *Special Report on Solar PV Global Supply Chains* (July 2022) 36.

[33] Francesca Manta and Alice Pease, *Not a Moving Target: The Responsibility to Respect Human Rights in the Transport and Logistics Sector* (Heinrich Böll Stiftung, October 2021), https://eu.boell.org/en/2021/10/05/not-moving-target-responsibility-respect-human-rights-transport-and-logistics-sector.

[34] Global Compact Network Australia, *Modern Slavery within Maritime Shipping Supply Chains* (December 2022), https://unglobalcompact.org.au/wp-content/uploads/2022/12/Modern-Slavery-within-Maritime-Shipping-Supply-Chains.pdf.

[35] Average mine footprint measured at 1.3 sq km by Tang Liang et al, 'A Global-Scale Spatial Assessment and Geodatabase of Mine Areas' (2021) 204 *Global and Planetary Change* 103578. Larger solar projects are often ten to 50 times this, e.g., https://www.synergy.net.au/Blog/2023/08/Solar-farm-facts.

[36] Sarah LaBrecque, 'Why Solar and Wind Developers Ignore Indigenous Land Claims at Their Peril,' *Reuters* (6 April 2023), https://www.reuters.com/default/why-solar-wind-developers-ignore-indigenous-land-claims-their-peril-2023-04-06/.

[37] WRI India, *Renewable Energy to Responsible Energy: A Call to Action* (2021) 29.

[38] Dayna Nadine Scott and Adrian Smith, '"Sacrifice Zones" in the Green Energy Economy: Toward an Environmental Justice Framework' 62(3) *McGill Law Journal* 861, 881–5.

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G. End of life

While there have not yet been comprehensive studies of the human rights implications, the fact that there is currently very little recycling of solar panels signifies potential environmental and human rights impacts as those panels go to landfill.[39]

The breadth and nature of these risks and impacts make it critical that they be adequately managed. Assessing these human rights risks on the 'transition to' side and then avoiding, mitigating and remediating impacts must be seen as a key part of the just transition equation. Rather than focusing only on the 'leave no one behind,'[40] we should be looking more holistically at the human rights impacts of our transition away from fossil fuels and into renewables. This is not just a 'nice to have'; in order to mitigate the devastating human rights impacts of climate change, it is essential that the transition be effective. This requires substantial buy-in from all geographies and socioeconomic levels and it unlikely to be achieved unless key elements of the transition are widely perceived to be just.

'Just' in the context of the transition goes beyond avoidance and mitigation of risks and negative impacts on rights, however. The shift to renewables and a more sustainable global economy brings with it enormous economic opportunities that represent the potential to make significant positive impacts on human rights, particularly economic, social and cultural rights. A just transition must therefore seek to maximize these benefits. However, the distribution of benefits must also be just, in order to avoid a situation where the energy transition creates economic opportunities for the wealthy in the advanced economies of the global North while risks and negative impacts are offshored to the most vulnerable in the global South.

We can therefore define just transition as: a transition away from fossil fuels and into renewable energy that minimizes negative impacts on people and their rights, maximizes positive ones and ensures equitable distribution of risks and opportunities.

This simple definition does not capture the complexities involved in securing such a transition but has the benefit of being able to capture the breadth of the issue and incorporate considerations on both sides of the transition equation, the 'from' and the 'to.'

This section has clearly established that the human rights impacts—positive and negative—of the extraction of transition minerals fall clearly within the scope of just transition issues. However, what does 'just transition' look like on the ground? Understanding how to operationalize the concept is critical to making progress on it.

In order to ensure a just transition in the extraction of critical minerals, one aspect it is necessary for us to deeply examine is the mine-community interface,[41] by which I mean the totality of the relationship between mine and community, including the risks and impacts (negative and positive) associated with it. Analyzing this is critical to gaining a better understanding of the drivers of successful engagement between mining companies and communities. The rest of this paper examines this interface and these drivers using South America's 'lithium triangle' as a case study, based on the extensive fieldwork in Chile and Argentina detailed above.

[39] Atalay Atasu, Serasu Duran and Luk N Van Wassenhove, 'The Dark Side of Solar Power' (18 June 2021) *Harvard Business Review*, https://hbr.org/2021/06/the-dark-side-of-solar-power.

[40] Included in many just transition definitions, including the ILO's: 'A Just Transition Means Greening the Economy in a Way that is as Fair and Inclusive as Possible to Everyone Concerned, Creating Decent Work Opportunities and Leaving No One Behind,' https://www.ilo.org/global/topics/green-jobs/WCMS_824102/lang–en/index.htm.

[41] The mine-worker interface is another necessary dimension to examine, as is the supply chain of the mining company itself, but these are not the focus here.

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III. Lithium and the Lithium Triangle

Lithium is the lightest metal and has long had applications in various areas, including ceramics and psychiatric pharmaceuticals. In recent years it has come to be a boom metal due to the rise of lithium-ion battery technology. Rechargeable batteries of this type are ubiquitous in consumer electronics but it is the role of this battery technology in renewable energy storage and as the driving force of electric vehicles that has led to surging demand for lithium and the other mineral inputs to these batteries, such as cobalt, nickel, manganese and graphite.[42]

Lithium is a comparatively widespread mineral, though largely found in very low concentrations.[43] Lithium ores, commonly spodumene, are extracted via standard rock mining methods in several states, Australia being the largest current producer.[44] A significant proportion of the world's lithium reserves are not found in rock, however, but in brine deposits from which the mineral is easier and more lucrative to extract and process.[45] Most of this type of lithium is contained in an area of northern Chile, northwestern Argentina and southwestern Bolivia known as the 'lithium triangle.' Here, among arid landscapes high in the Andes mountains, lithium is extracted from highly concentrated brine deposits under vast salt flats (*salares*). Although figures shift fast as new lithium deposits are being identified across the globe, it is currently estimated that this region contains some 46 per cent of current lithium reserves and over 50 per cent of known global resources.[46]

This type of extraction of lithium involves drilling boreholes and pumping large quantities of the brine into large shallow surface tanks, where the water evaporates off and various salts are precipitated out, leaving a lithium-rich sludge which can be processed into lithium carbonate or other lithium-based compounds.[47] Impacts on the freshwater table are unclear as the system is highly complex and baseline data are lacking[48] but the situation is exacerbated by climate change, which is already having significant effects in this arid area. Companies in the area are working to develop extraction techniques that do not require evaporation or the reinjection of water.[49]

[42] See International Energy Agency, note 6; Colin McKerracher and Siobhan Wagner, 'At Least Two-Thirds of Global Car Sales Will Be Electric by 2040,' *Bloomberg Markets* (9 August 2021), https://www.bloomberg.com/news/articles/2021-08-09/at-least-two-thirds-of-global-car-sales-will-be-electric-by-2040; Levin Sources, *Solar Photovoltaic and Energy Storage in the Electric Grid* (December 2017); Stratfor Worldview, *Lithium: Powering a Global Revolution* (20 October 2017), https://worldview.stratfor.com/article/lithium-powering-global-revolution.

[43] Donald E Garrett, *Handbook of Lithium and Natural Calcium Chloride: Their Deposits, Processing, Uses and Properties*. (Elsevier Academic Press, Amsterdam, 2004) 1.

[44] US Geological Survey, *Mineral Commodity Summaries January 2023* (January 2023) 109, https://pubs.usgs.gov/periodicals/mcs2023/mcs2023.pdf.

[45] S&P Global Market Intelligence, 'Essential Insights: Lithium Costs & Margins' (2019), https://pages.marketintelligence.spglobal.com/Lithium-brine-vs-hard-rock-demo-confirmation-MJ-ad.html.

[46] US Geological Survey, note 44, 109.

[47] Victoria Flexer, Celso Fernando Baspineiro and Claudia Inés Galli, 'Lithium Recovery from Brines: A Vital Raw Material with a Potential Environmental Impact in Its Mining and Processing' (2018) 639 *Science of the Total Environment* 1188.

[48] Brendan J Moran et al, 'Relic Groundwater and Prolonged Drought Confound Interpretations of Water Sustainability and Lithium Extraction in Arid Lands' (2022) 10(7) *Earth's Future* 10.1029/2021EF002555; MA Marazuela et al, 'Hydrodynamics of Salt Flat Basins: The Salar de Atacama Example' (2019) 651(1) *Science of the Total Environment* 668; Virginia De Francesco, 'La imperiosa necesidad de contar con información confiable' (2018) 10 *Pulso Ambiental* 15; Marcelo Sticco, Patricio Scravaglieri and Antonella Damiani, *Estudio de los Recursos Hídricos y el Impacto por Explotación Minera de Litio. Cuenca Salinas Grandes y Laguna Guayatayoc - Provincia de Jujuy* (December 2018).

[49] Amir Razmjou, *Direct Lithium Extraction (DLE): An Introduction* (International Lithium Association, 2024), http://lithium.org/wp-content/uploads/2024/07/ILiA-DLE-Brochure-Full-Version-July-2024.pdf; Katie Brigham, 'How New Lithium Extraction Technology Could Help Us Meet Electric Vehicle Targets,' *CNBC* (5 June 2023), https://www.cnbc.com/2023/06/05/how-new-lithium-extraction-tech-could-help-us-meet-ev-targets.html.

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Brine extraction in the lithium triangle, although prima facie less environmentally intrusive than hard rock mining, has been criticized for its impact on the environment as well as on human rights.[50] While any environmental impact in a fragile and arid region means that several rights are potentially affected—including the rights to health, food, cultural life, work and an adequate standard of living, the right to water is a principal concern of communities in the lithium triangle: any impacts on the freshwater table would endanger the rights just mentioned, along with the interrelated Indigenous human rights to consultation, self-determination and free, prior and informed consent (FPIC). These rights impacts are discussed in more detail in the following section.

IV. Framework for Analyzing Just Transition in the Lithium Triangle

Taking the above definition of just transition as a base, how can we break down the equation in the lithium triangle in order to identify success factors? It is clear that the triangular relationship between government, companies and communities must be a cornerstone. However, while conflicts and human rights outcomes in the context of mining have generally been determined by how this triangular relationship plays out, perhaps with the involvement of another party in the form of NGOs or other civil society organizations,[51] the business and human rights landscape is changing fast and the dynamics have become rapidly more complex, as will be shown.

Legislation requiring companies to conduct human rights due diligence in operations and supply chains is proliferating,[52] which brings mining companies' home states into the picture as potential actors in the dynamic but also means that downstream customers are increasingly asking their upstream suppliers for confidence and assurance on social measures.[53] At the same time, project financers are asking for guarantees on environmental and social performance via the IFC Performance Standards and Equator Principles,[54] while reporting requirements from investors, markets and exchanges and scrutiny from shareholders, consumers and broader civil society create an environment whereby external actors are potentially a major influence on social outcomes at the mine site.[55] These external factors must also then be considered when analyzing just transition in the context of critical mineral extraction, as they may crucially shape the mine-community interface. These factors were analyzed in detail through the research and fieldwork detailed above.

In order to analyze success factors for a just transition, this paper next examines the first part of the definition—the minimization of negative right impacts, and then considers positive impacts and equitable distribution.

[50] Marchegiani, Höglund Hellgren and Gómez, note 26; Gustavo Romeo, 'Riesgo ambiental e incertidumbre en la producción del litio en salares de Argentina, Bolivia y Chile' in Bruno Fornillo (ed), *Litio en Sudamérica: Geopolítica, Energía, Territorios* (Editorial el Colectivo, 2019) 223; Amanda Romero, José Aylwin and Marcel Didier, *Globalización de las empresas de energía renovable: Extracción de litio y derechos de los pueblos indígenas en Argentina, Bolivia y Chile ('Triángulo del Litio')* (2019).

[51] Deanna Kemp, 'Community Relations in the Global Mining Industry: Exploring the Internal Dimensions of Externally Orientated Work' (2010) 17(1) *Corporate Social Responsibility and Environmental Management* 1; Deanna Kemp et al, 'Just Relations and Company–Community Conflict in Mining' (2011) 101(1) *Journal of Business Ethics* 93; Helen Cheney, Roy Lovel and Fiona Solomon, *People, Power, Participation: A Study of Mining-Community Relationships* (Mining, Minerals and Sustainable Development Project, 2002).

[52] E.g., CSDDD, note 30; Regulation (EU) 2023/1542 of the European Parliament and of the Council of 12 July 2023 Concerning Batteries and Waste Batteries 2023 ('Battery Regulation').

[53] Symington, note 10, 6.4.2.

[54] For an example, see ibid, 201.

[55] Ibid, 6.4.

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A. Minimization of Negative Impacts

Negative rights impacts associated with the extractive industries have been documented in detail (see note 2), with South America having seen some of the worst effects, dating from the very earliest days of European colonization.[56] While the impacts vary widely according to what is being extracted and the nature of the mine, they are often locked in early in the process of development.[57] This is a key consideration—as the nature of an extractive operation is often relatively unchangeable,[58] many negative impacts are effectively predestined from the moment a licence is granted. This means that robust state engagement with potential impacts at the earliest stage of the licensing process is critical. The nature of mining, whereby prospecting and exploration are often conducted by small companies—in the lithium triangle, it is often literally an engineer and a truck—which often lack the capacity, capability or will to conduct impact assessments or community consultation,[59] emphasizes the importance of the state's role at this crucial stage. There is also potentially a role for other actors—shareholders and other investors—in bridging this gap.[60]

As mentioned above, key potential negative rights impacts to be considered in the lithium triangle are those associated with water and the interrelated Indigenous rights to consultation, FPIC and self-determination. It is important to highlight here the interconnectedness of environmental impacts and human rights impacts.

International environmental law plays a significant part in some of the key interactions between states, companies and communities in the area.[61] Environmental law and human rights law have been characterized as 'converging regimes' due to a growing understanding that environmental protection is in many cases necessary for effective protection of human rights.[62] Similarly, George notes that 'unsustainable extraction of natural resources and associated environmental degradation over the objection of affected communities that are subjected to abuses show why it is important to appreciate how human rights, the environment and sustainable development issues can intersect.'[63]

The above emphasizes that, though often assessed discretely, it is increasingly difficult to disentangle environmental and human rights impacts. This is particularly so in the lithium triangle for two reasons. Firstly, Indigenous rights are intimately concerned with the relationship of Indigenous communities to territory and therefore have a significant environmental dimension. Secondly, the arid climate of the lithium triangle, already considered a water-stressed environment,[64] means that any impact from extractive activity on freshwater sources has an exaggerated effect on the right to water and other

[56] Eduardo Galeano, *The Open Veins of Latin America* (Monthly Review Press, New York, 1971).

[57] United Nations Development Program and United Nations Environment, *Managing Mining for Sustainable Development: A Sourcebook* (April 2018) 30–37.

[58] Uwafiokun Idemudia, 'Oil Extraction and Poverty Reduction in the Niger Delta: A Critical Examination of Partnership Initiatives' (2009) 90(S1) *Journal of Business Ethics* 91, 110–11.

[59] Symington, note 10, 6.3.

[60] Motoko Aizawa, Daniela C dos Santos and Sara L Seck, 'Financing Human Rights Due Diligence In Mining Projects' in Sumit K Lodhia (ed), *Mining and Sustainable Development: Current Issues* (Routledge, Abingdon, 2018) 99.

[61] Barbara Göbel, 'La minería del litio en la Puna de Atacama: interdependencias transregionales y disputas locales' (2013) XIII(49) *Iberoamericana* 135, 147.

[62] Ben Boer and Rosemary Mwanza, 'The Converging Regimes of Human Rights and Environmental Protection in International Law' (2020) No 20/09 *The University of Sydney Law School Legal Studies Research Paper Series.*

[63] Erika George, 'Shareholder Activism and Stakeholder Engagement Strategies: Promoting Environmental Justice, Human Rights, and Sustainable Development Goals' (2019) 36 *Wisconsin International Law Journal* 298, 309.

[64] Centro de Ciencia del Clima y la Resiliencia, 'Water Scarcity in Northern and Central Chile', https://www.cr2.cl/about-cr2/integrated-studies/water-scarcity-in-northern-and-central-chile/.

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associated human rights. In this region, which includes some of the driest places on Earth, water has huge value symbolically and culturally as well as practically.[65]

Rights to Water and a Clean, Healthy and Sustainable Environment

Article 11 of the International Covenant on Economic, Social and Cultural Rights[66] articulates the right to food, but water is notably absent; recognition of a right to water has had a separate, contested evolution. The right was confirmed in the strongest possible terms by the United Nations (UN) Committee for Economic, Social and Cultural Rights in its General Comment 15, which associated it with the rights to health and an adequate standard of living, stating that: 'The human right to water is indispensable for leading a life in human dignity. It is a prerequisite for the realization of other human rights.'[67] However, this position has been criticized by some scholars[68] and, while a 2010 General Assembly resolution reaffirmed the right, stating that the right to safe and clean drinking water is 'a human right that is essential for the full enjoyment of life and all human rights,'[69] many states abstained and some had worked to prevent it happening, preferring to see water as a commodity.[70] Nevertheless, the resolution was voted for by all three lithium triangle states.

Moving to the right to a healthy environment, evolving jurisprudence has advanced understanding of the nexus of environmental impacts and human rights. Much of it has emanated from the Inter-American system,[71] building upon Article 11 of the Protocol of San Salvador, which states that '[e]veryone shall have the right to live in a healthy environment' and that states parties 'shall promote the protection, preservation and improvement of the environment.'[72] The right is also cited in the regional Acuerdo de Escazú,[73] which obliges states to take all necessary measures to guarantee that right, as well as provide access to information about potential environmental impacts.

A growing understanding of the convergence between human rights and the environment led to the appointment of a UN Special Rapporteur on the subject, whose 2018 Framework Principles on Human Rights and the Environment[74] set out a series of

[65] Sally Babidge, 'Contested Value and an Ethics of Resources: Water, Mining and Indigenous People in the Atacama Desert, Chile' (2016) 27 *The Australian Journal of Anthropology* 84.

[66] *International Covenant on Economic, Social and Cultural Rights 1966* 16 December 1966, into force 3 January 1976 ('*ICESCR*').

[67] United Nations Committee on Economic, Social and Cultural Rights, *General Comment No. 15: The Rights to Water (Arts. 11 and 12 of the Covenant)* (UN Doc E/C.12/2002/11, 20 January 2003) 1.

[68] For a summary see Takele Soboka Bulto, 'The Human Right to Water: Invention or Discovery?' (2011) 12(2) *Melbourne Journal of International Law*.

[69] *Resolution 64/292: The Human Right to Water and Sanitation 2010* 64.

[70] Madeline Baer, 'Beyond Consensus: Contesting the Human Rights to Water and Sanitation at the United Nations' [2022] *Human Rights Review.*

[71] Inter-American Court of Human Rights, *Obligaciones estatales en relación con el medio ambiente en el marco de la protección y garantía de los derechos a la vida y a la integridad personal - interpretación y alcance de los artículos 4.1 y 5.1, en relación con los artículos 1.1 y 2 de la convención americana sobre derechos humanos* (No Opinión Consultiva OC-23/17, 15 November 2017) 62–3; For an English summary see Maria L Banda, 'Inter-American Court of Human Rights' Advisory Opinion on the Environment and Human Rights,' *American Society of International Law* (10 May 2018), www.asil.org/insights/volume/22/issue/6/inter-american-court-human-rights-advisory-opinion-environment-and-human.

[72] Organization of American States, *Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights 'Protocol of San Salvador'* (No OAS Treaty Series 69, 17 November 1988) in force 16 November 1999.

[73] United Nations Economic Commission for Latin America and the Caribbean (ECLAC/CEPAL), *Acuerdo Regional sobre el Acceso a la Información, la Participación Pública y el Acceso a la Justicia en Asuntos Ambientales en América Latina y el Caribe* (UN Doc LC/CNP10.9/5, 4 March 2018) entered into force 22 April 2021 ('*Acuerdo de Escazú*').

[74] United Nations Human Rights Council, Framework Principles on Human Rights and the Environment (No A/HRC/37/59, 24 January 2018).

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procedural and substantive state obligations. Particularly relevant in the context of the lithium triangle is the framing of the obligation of nondiscrimination, which notes that indirect discrimination can be created by 'measures that adversely affect ecosystems, such as mining and logging concessions, [which] have disproportionately severe effects on communities that rely on the ecosystems.'[75] This demonstrates that states must closely consider this interreliance when granting extractive permits and that this consideration should be explicitly incorporated into corporate human rights due diligence.

In 2021, the UN Human Rights Council formally recognized the human right to a clean, healthy and sustainable environment,[76] confirmed by the General Assembly in 2022.[77] Guidance on this right published by the Special Rapporteur in 2024 emphasizes that one component of the state obligation to protect the right is that responses 'should be informed by the best available science,'[78] again a point of especial relevance to the lithium triangle as will now be demonstrated.

Brine extraction in the lithium triangle pumps out and evaporates enormous amounts of water[79] and, though this water is highly saline, actual and potential effects on freshwater sources have been the cause of significant worry and conflict as the fresh water that is used by local communities also comes from the same closed hydrographic system.[80] Mining companies also directly use significant quantities of fresh water, with lithium operators no exception.[81]

The impacts of brine extraction on the freshwater system are not easily determined. The hydrographic system of each *salar* is distinct and complex, with a delicate balance of fresh and salt water, typically in contact with each other.[82] Density contrast results in a mixing zone or saline interface.[83] This raises the concern that brine extraction from the centre of the system would draw the fresh water from the periphery to the *salar´*s centre, where it would become both less accessible and more saline. This has understandably led to community anxiety—'our worry was always the amount of water which would be used in this extractive activity,' stated a prominent local activist.[84]

A key problem for companies, communities and governments is a lack of knowledge about the hydrographic systems and the effects of brine lithium extraction. Every *salar* is distinct and there is very little hydrographic data on them, meaning there is no baseline from which to measure potential impacts.[85] There is no knowledge of how much brine and fresh water is present or in some cases data on natural replenishment.[86] Moreover, the absence of detailed government studies before brine pumping began means that how

[75] Ibid, Principle 3, commentary 9.

[76] United Nations Human Rights Council, *The Human Right to a Safe Clean, Healthy and Sustainable Environment* (UN Doc A/HRC/48/L.23/Rev.1, 5 October 2021).

[77] United Nations General Assembly, *The Human Right to a Clean, Healthy and Sustainable Environment* (No A/RES/76/300, 28 July 2022).

[78] United Nations Human Rights Council, *The Right to a Healthy Environment: A User's Guide* (April 2024) 15.

[79] Averaging 10 million cubic metres of water a year according to Romeo, note 50, 233.

[80] Romero, Aylwin and Didier, note 50, 37ff.

[81] 'Diario Constitucional (Chile)' (online, 11 June 2019), https://www.diarioconstitucional.cl/noticias/asuntos-de-interes-publico/2019/06/11/sala-de-la-camara-de6diputados-solicita-estudios-sobre-disponibilidad-de-agua-y-estres-hidrico-en-salar-de-atacama/; and discussion at Symington, note 10, 32.

[82] Flexer, Baspineiro and Galli, note 47, 1194–6.

[83] Marazuela et al, note 48.

[84] Clemente Flores, 'Entre el litio y la vida: Comunidades originarias y la lucha por la conservación del agua y de su cultura' in *Informe Ambiental Anual 2017* (2017) 157.

[85] Marazuela et al, note 48.

[86] De Francesco, note 48.

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the systems have changed since is unknown.[87] This uncertainty understandably generates conflict,[88] as communities are unable to access information on the risks that they face.

An independent 2022 hydrological assessment of the Salar de Atacama highlighted that the system was even more complex than imagined and that current water allocations failed to factor in the importance of historic rain and drought events.[89] It noted that freshwater use by mining companies had a greater effect on freshwater resources than did brine extraction but concluded that '[u]tilizing lithium brine and freshwater resources in arid basins while effectively mitigating impacts from its extraction is unattainable without a comprehensive science-based understanding of these hydrological and geochemical systems.'[90]

That the region is vulnerable is unquestionable. Freshwater sources are crucial for local human life and livelihoods as well as biodiversity.[91] National parks and nature reserves dot the region, protecting species and providing local communities with incomes from employment and tourism. Any effects compound existing and future impacts caused by climate change.[92]

The above illustrates a key problem when considering a just transition in the lithium triangle—that the risks and negative impacts are difficult to determine. This is a frequent issue on the 'transition to' side—it is difficult for us to understand the risk profile over the lifecycle of, for example, a green hydrogen plant, simply because we do not have enough experience with them yet.

In terms of minimization of negative impacts on the rights to water and a clean, healthy and sustainable environment in the lithium triangle, then adequate data are critical to fulfil the 'best available science' criterion and to be able to understand and measure impact. However, drawing on local Indigenous knowledge to arrive at a fuller understanding of the ecosystem and how to protect it will also be critical. A more holistic approach to due diligence that includes both human rights and environmental risks is also important.[93]

The nature of brine lithium extraction means detailed longitudinal hydrographic data that can clarify the impacts of extraction on the local environment and the freshwater table is badly needed. Much more work on understanding the interfaces between fresh and salt water is also required.[94] Uncertainty is exacerbated by the climate crisis, already significantly impacting water in the region,[95] and by governments considering mining project impacts in isolation rather than looking at the cumulative effect of all mines in a particular hydrographic basin.[96] There is a clear need for governments to take broader, strategic basin management approaches—incorporating hydrological studies, biodiversity

[87] Marazuela et al, note 48.

[88] Sally Babidge, 'Sustaining Ignorance: The Uncertainties of Groundwater and Its Extraction in the Salar de Atacama, Northern Chile' (2018) 00 *Journal of the Royal Anthropological Institute* 1, 2.

[89] Moran et al, note 48.

[90] Ibid, 19–20.

[91] Babidge, note 65.

[92] Ramón Morales Balcázar, 'The Atacama: At the Centre of Climate Injustice' 29(3) *Human Rights Defender*, https://issuu.com/humanrightsdefender/docs/unswa016_human_rights_defender_publication_vol29_i/s/11165472.

[93] Claire Bright and Karin Buhmann, 'Risk-Based Due Diligence, Climate Change, Human Rights and the Just Transition' (2021) 13(18) *Sustainability* 10454.

[94] Marazuela et al, note 48.

[95] Morales Balcázar, note 92.

[96] Romeo, note 50, 253; Symington, note 10, 4.4.3.

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metrics, Indigenous knowledge and other community input—in the lithium triangle's *salares.* While national action plans on business and human rights are recommended by the UN as a critical step in embedding the UNGPs and have the potential to coordinate governmental responses in this type of arena,[97] whether they will be effective or sufficient is still unclear.

For existing projects, community participation in environmental monitoring, which already takes place around some lithium triangle projects,[98] is one way to redress the data imbalance but only in conjunction with red lines embedded in mining contracts whereby production must halt if certain environmental indicators reach a trigger level. The government must also be involved in the enforcement of this type of provision: communities understandably lack confidence that companies will self-regulate in this manner;[99] their scepticism is supported by the literature, which suggests that companies will only do so when profitability is not threatened.[100]

Community participation in environmental monitoring is an example of the kind of bottom-up process that is critical to ensuring a just transition globally. Community-led impact assessments[101] and comanagement (see the following section) are another step towards giving real agency to those people actually affected by a potential transition minerals project and those who possess the most knowledge of local ecosystems. It can also help to realize the access right to information articulated in the Escazú agreement.[102]

As well as better data, access to them, and a more strategic approach, there is a clear need for improved extractive techniques. While brine lithium extraction is substantially cheaper than hard rock mining, technological advances must find a way to extract lithium from brine without the need to pump and evaporate such vast quantities out of the *salar.* Much research is happening in this area, but a significant barrier is that each *salar*'s chemical composition is so different that extraction techniques must be specifically tailored for each operating context, a process which already can take years.[103]

Beyond freshwater impacts caused by brine extraction, the amount of water used by mining companies in day-to-day operations is a key concern of communities.[104] This amount varies substantially but must be reduced, particularly in the context of climate change resulting in diminishing glacierization further up in the mountains.[105] While desalination such as that committed to by BHP at the massive Escondida copper mine[106] may not be an option for smaller lithium miners, concrete measures to reduce water usage are required, such as more rigour around the concession of water permits from the government.

[97] UN Working Group on Business and Human Rights, *Guidance on National Action Plans on Business and Human Rights* (December 2014).

[98] Symington, note 10, 7.5.3.

[99] Ibid.

[100] Penelope Simons and Audrey Macklin, *The Governance Gap: Extractive Industries, Human Rights, and the Home State Advantage* (Routledge, Abingdon, 2014) 176.

[101] For some recent case studies, see Dayna Scott, Jennifer Sankey and Laura Tanguay, 'Operationalizing Indigenous-Led Impact Assessment' [2023] Dayna Nadine Scott, Jennifer Sankey and Laura Tanguay (eds.) *Operationalizing Indigenous-led Impact Assessment*, https://digitalcommons.osgoode.yorku.ca/reports/241; Jeffrey Nishima-Miller et al, 'Tools for Indigenous-Led Impact Assessment: Insights from Five Case Studies' (2024) 42(1) *Impact Assessment and Project Appraisal* 70.

[102] United Nations Economic Commission for Latin America and the Caribbean (ECLAC/CEPAL), note 73.

[103] Razmjou, note 49.

[104] Symington, note 10, 2.3.

[105] Sebastian Felipe Ruiz Pereira and Bijeesh Kozhikkodan Veettil, 'Glacier Decline in the Central Andes (33°S): Context and Magnitude from Satellite and Historical Data' (2019) 94 *Journal of South American Earth Sciences* 102249.

[106] Cecilia Jamasmie, 'BHP to Supply Water for Escondida Mine from Desalination Plant Only,' *Mining.com* (4 February 2020), https://www.mining.com/bhp-to-supply-water-for-escondida-mine-from-desalination-plant-only/.

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Consultation and FPIC

The Indigenous rights to consultation and FPIC as set out in International Labour Organization (ILO) Convention 169[107] (C169) and the UN Declaration on the Rights of Indigenous Peoples[108] (UNDRIP) are principles around which many broader expectations of Indigenous peoples and wider civil society have coalesced. They are key to understanding lithium triangle dynamics between government, companies and communities and should be seen as 'gatekeeper rights' that serve to protect and promote other rights. Minimizing the negative impact on these rights is, therefore, key to delivering a just transition in the lithium triangle. However, because these rights are best understood as operationalizing the right to self-determination, which underpins many C169 and UNDRIP rights,[109] they are also key to the next part of the just transition equation, that of maximizing positive impacts, which is discussed in the following section.[110]

Consultation with Indigenous populations is an obligation of state parties under C169, which requires governments to: 'consult the peoples concerned, through appropriate procedures and in particular through their representative institutions, whenever consideration is being given to legislative or administrative measures which may affect them directly.'[111] The purpose of the consultation, which must be undertaken 'in good faith and in a form appropriate to the circumstances,' is to achieve 'agreement or consent to the proposed measures.'[112] Another article specifically includes further consultation provisions in the context of mining rights on Indigenous land:

> In cases in which the State retains the ownership of mineral or sub-surface resources or rights to other resources pertaining to lands, governments shall establish or maintain procedures through which they shall consult these peoples, with a view to ascertaining whether and to what degree their interests would be prejudiced, before undertaking or permitting any programmes for the exploration or exploitation of such resources pertaining to their lands. The peoples concerned shall wherever possible participate in the benefits of such activities, and shall receive fair compensation for any damages which they may sustain as a result of such activities.[113]

Rodolfo Stavenhagen described FPIC as 'essential for the human rights of Indigenous peoples in relation to major development projects.'[114] His successor as Special Rapporteur, James Anaya, commented at length on the subject.[115] Anaya emphasized that, even when a private

[107] International Labour Organization, Convention 169 - Indigenous and Tribal Peoples (27 June 1989) entered into force 5 Sep 1991.

[108] United Nations General Assembly, United Nations Declaration on the Rights of Indigenous Peoples (No A/61/53, 13 September 2007).

[109] United Nations Human Rights Council, *Free, Prior and Informed Consent: A Human Rights-Based Approach. Study of the Expert Mechanism on the Rights of Indigenous Peoples* (UN Doc A/HRC/39/62, 10 August 2018) II, A.

[110] While this paper focuses on Indigenous Peoples specifically, it should be noted that UNDROP is also of relevance here, particularly the right of peasants and rural workers to determine their development priorities (3.2): *United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas 2018* (A/RES/73/165).

[111] Art 6.1a.

[112] Art 6.2.

[113] Art 15.2.

[114] United Nations Commission on Human Rights, *Report of the Special Rapporteur on the Situation of Human Rights and Fundamental Freedoms of Indigenous People, Rodolfo Stavenhagen, Submitted in Accordance with Commission Resolution 2001/65* (No E/CN.4/2003/90, 21 January 2003) 66.

[115] United Nations Human Rights Council, *Report of the Special Rapporteur on the Rights of Indigenous Peoples, James Anaya. Addendum: The Situation of Indigenous Peoples in Argentina* (UN Doc A/HRC/21/47/Add.2, 4 July 2012); United Nations Human Rights Council, *Report of the Special Rapporteur on the Situation of Human Rights and Fundamental*

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company is to extract the resources, responsibility for consultation and consent processes lies with the states.[116] He nevertheless noted that extractive companies should undertake human rights due diligence (HRDD) to ensure Indigenous rights are not being impacted and should not accept extractive concessions from states if prior consultation and consent are absent.[117] This models a dynamic whereby states establish a consultation and consent framework before granting extractive licences, to be issued subject to certain guarantees. Companies would then seek state guarantees that an adequate framework already exists and that their impact will fit within the agreed parameters.

The Inter-American Court on Human Rights, in its key *Saramaka People v Suriname* judgement, which concerned a non-Indigenous but Afro-descendent community seeking rights over the land they traditionally occupied, ruled that states have 'a duty to actively consult with said community according to their customs and traditions.'[118] The Court, which considered Saramaka rights to be identical to Indigenous rights, held that FPIC is necessary for large-scale projects that would have a major impact, though it noted that the difference between consultation and consent 'requires further analysis' (134). It cited Article 21 of the ACHR (right to property) as the basis for the decision (154).

Going further than the Court, the Inter-American Commission on Human Rights, referring to Articles 18 (right to access to the courts) and 23 (right to property) of the American Declaration, has held that states must guarantee prior and informed consent for any acts and decisions that could affect Indigenous territory.[119] Similarly, the UN Expert Mechanism carried out a study of FPIC establishing it as a human rights norm derived from the principles of self-determination and nondiscrimination.[120] Control over lands and natural resources is considered by the body to be fundamental to self-determination; consent is therefore required before outside exploitation can occur.[121]

FPIC is also a central element of sector-specific frameworks of organizations relevant to the lithium context. The International Council on Mining and Metals (ICMM) considers that companies should 'work to obtain' consent and that consent processes should focus on 'reaching agreement on the basis for which a project ... should proceed.'[122] The International Finance Corporation (IFC) requires 'good faith negotiation,' a mutually accepted process and evidence of agreement to fulfil its FPIC requirement.[123] The advanced Initiative for

Freedoms of Indigenous People, James Anaya. Addendum: The Situation of Indigenous Peoples in Chile: Follow-up to the Recommendations Made by the Previous Special Rapporteur (UN Doc A/HRC/12/34/Add.6, 5 October 2009); United Nations Human Rights Council, *Report of the Special Rapporteur on the Rights of Indigenous Peoples, James Anaya: Extractive Industries and Indigenous Peoples* (UN Doc A/HRC/24/41, 1 July 2013).

[116] United Nations Human Rights Council, 'Report of the Special Rapporteur on the Situation of Human Rights and Fundamental Freedoms of Indigenous People, James Anaya. Addendum: The Situation of Indigenous Peoples in Chile: Follow-up to the Recommendations Made by the Previous Special Rapporteur', note 115, 54.

[117] United Nations Human Rights Council, 'Report of the Special Rapporteur on the Rights of Indigenous Peoples, James Anaya: Extractive Industries and Indigenous Peoples', note 115, 52–7.

[118] *Saramaka People v Suriname* [2007] Inter-American Court of Human Rights Series C No. 172, 133.

[119] *Comunidades Indígenas Mayas del Distrito de Toledo v Belize* [2004] Inter-American Commission on Human Rights Report N° 40/04, Case 12053, 142.

[120] United Nations Human Rights Council, 'Free, Prior and Informed Consent: A Human Rights-Based Approach. Study of the Expert Mechanism on the Rights of Indigenous Peoples', note 109.

[121] Ibid, 6–8.

[122] International Council on Mining and Metals, *Indigenous Peoples and Mining: Good Practice Guide 2nd Edition* (2015) 11.

[123] International Finance Corporation, *Performance Standards on Environmental and Social Sustainability* (1 January 2012), Standard 7.12.

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Responsible Mining Assurance (IRMA) multi-stakeholder framework includes FPIC as a cornerstone.[124]

Community and civil society expectations of consultation and consent have moved beyond what is established by treaties or regulations and are predicted to go further.[125] FPIC has broadened in its scope as other expectations have coalesced around it, and its meaning has expanded beyond the definitions of the four words that comprise it to include principles such as land rights, cultural heritage, coownership and comanagement of extractive projects.[126]

Both Chile and Argentina have ratified C169 and voted for UNDRIP. However, analysis and fieldwork evidence suggest that convention compliance is rather limited in the lithium triangle. Chile in many ways seeks to interpret its own C169 obligations as narrowly as possible—consultation is in practice generally only undertaken as part of the environmental impact assessment process, whereas the convention requires it for all administrative measures. Additionally, the Chilean state has argued that the granting of mining concessions, as judicial, rather than administrative, acts, is not covered by C169.[127] In Argentina, Indigenous consultation is barely contemplated at the national level; at the provincial level it is mandatory in Jujuy but also narrowly applied, as the government is only legally required to consult with the community that holds land title where a project is proposed to be located, while local communities typically hold a much broader view of which people have rights to that territory.[128]

However, in both countries, there is substantial evidence that responsibilities for consultation are being transferred to companies.[129] This represents an effective privatization of these rights, created by the absence of the state or its failure to fulfil its treaty obligations. This 'privatization by absence,'[130] whereby state obligations are effectively devolved to companies, means that it is the company-community relationship in the lithium triangle that is currently key to realising a just transition in the context of Indigenous rights.

In recent years, extractive companies have often been leaders in developing community relations strategies. A huge footprint and environmental impact often require them to justify their sustainability,[131] while operating in remote areas for an extended period can create a marked codependence between the company and the local community. The development of these strategies must be seen in the context of two broad interrelated factors: the increasing ability of local communities to pose a risk to the viability of extractive projects,[132] and evolving expectations of corporate behaviour by civil society more broadly. Lithium triangle fieldwork demonstrated that, while some companies have progressed

[124] Initiative for Responsible Mining Assurance (IRMA), *IRMA Standard for Responsible Mining IRMA-STD-001* (June 2018).

[125] Deanna Kemp and John R Owen, 'Corporate Readiness and the Human Rights Risks of Applying FPIC in the Global Mining Industry' (2017) 2(1) *Business and Human Rights Journal* 163, 164–5.

[126] Ciaran O'Faircheallaigh, 'Negotiated Agreements, Indigenous FPIC, and the Mine Life Cycle' in Ibironke T Odumosu-Ayanu and Dwight Newman (eds.), *Indigenous-Industry Agreements, Natural Resources and the Law* (Routledge, Abingdon, 2021) 63.

[127] For a fuller discussion, see Symington, note 10, 5.4.2.

[128] Ibid.

[129] Ibid.

[130] For a more detailed discussion, see ibid, 4.5.4.

[131] Ciarán O'Kelly, 'Human Rights and the Grammar of Corporate Social Responsibility' (2019) 28(5) *Social & Legal Studies* 625, 633.

[132] Symington, note 10, 6.2.1.

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further than others, all those studied were evolving their approach towards enhanced engagement with communities.[133]

By setting down a framework for engagement and interaction, corporate community relations strategies are directly related to consultation and, depending on company policy, to FPIC and self-determination. The effective privatization of certain rights and the role of consultation and FPIC as gatekeepers for other rights means that lithium triangle companies and communities are typically negotiating directly on matters of substantial import for rights outcomes.

While a traditional model of corporate compliance with human rights envisages state presence mandating standards for companies to follow via regulation,[134] it is state absence in the lithium triangle that often drives greater corporate engagement with communities.[135] This sometimes leads to better rights outcomes;[136] somewhat ironic but perhaps increasingly probable where community opposition has a heightened ability to create project risk. The absence of the state and lack of clarity over rights-related roles and responsibilities also generates uncertainty and risk meaning that, for the company, regulatory compliance is often no longer sufficient: where companies cannot rely on the state to mitigate risk, their community engagement, along with internal corporate structure and culture, becomes key to addressing that risk. Importantly, the importance of reputational risk in lithium supply chains means that corporate compliance with certain soft law standards, which can be held to reflect evolving societal norms,[137] appears to be a greater driver of positive rights outcomes than the 'hard' legal status of human rights in Chile and Argentina.[138]

None of the above should be interpreted as concluding that rights are better served if states take a step backwards and companies and communities are left to negotiate their way. The reverse is true. The Inter-American Commission on Human Rights (IACHR) is adamant that rights such as consultation must not be privatized precisely because companies are profit-making entities and less likely to apply adequate human rights frameworks.[139] It is notable that a landmark agreement between Atacama communities and the lithium miner Albemarle/Rockwood, despite its importance for the company-community relationship, also includes a lengthy series of provisions exhorting the state to fulfil its obligations under the international and domestic Indigenous legal framework.[140]

While far from ideal, it is nevertheless clear that companies currently shoulder the lion's share of the responsibility to uphold the rights to consultation and consent in the lithium triangle, and these company-community processes therefore become key to a just transition in the region.

As outlined above, expectations of FPIC have gone beyond the words' literal meaning. Rather than representing a sign-off on the positive and negative impacts of a project, a true FPIC process is an ongoing relationship between the community and the company (ideally

[133] Ibid, 6.3.

[134] Steven R Ratner, 'Corporations and Human Rights: A Theory of Legal Responsibility' (2001) 111 *Yale Law Journal* 443.

[135] Symington, note 10, 4.5.4.

[136] Ibid, 6.3.5.

[137] Elise Groulx Diggs, Milton C Regan and Beatrice Parance, 'Business and Human Rights as a Galaxy of Norms' (2019) 50(2) *Georgetown Journal of International Law* 309.

[138] Symington, note 10, 6.4.5.

[139] Inter-American Commission on Human Rights, Indigenous and Tribal Peoples' Rights over Their Ancestral Lands and Natural Resources. Norms and Jurisprudence of the Inter-American Human Rights System (No OEA/Ser. L/V/II. Doc 56/09, 30 December 2009) 291.

[140] Ciaran O'Faircheallaigh and Sally Babidge, 'Negotiated Agreements, Indigenous Peoples and Extractive Industry in the Salar de Atacama, Chile: When Is an Agreement More than a Contract?' (2023) 54(3) *Development and Change* 641, 663–4.

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with substantial government involvement).[141] This ongoing relationship should incorporate established procedures for maintaining consent in the case of significant changes to the project, as well as procedures for withdrawal of consent should specific requirements not be met.[142] It should go beyond the UNGPs' requirement for 'good faith' consultation in human rights due diligence to incorporate Indigenous involvement in impact assessment itself.[143] A robust FPIC process protects a suite of other rights from negative impact and also is the critical enabler for Indigenous communities to determine their development priorities. Self-determination implies meaningful Indigenous participation in setting project parameters, with input or codesign shaping the nature of those impacts;[144] these considerations could also therefore be considered inherent to a legitimate FPIC process. In the lithium triangle, this self-determination is key to the next components of the just transition equation, the maximization of positive rights impacts and the equitable distribution of the benefits of the transition.

B. *Maximization of Positive Impacts*

As discussed in the Introduction, the UNGPs crucially clarify that companies cannot use positive impact on human rights to compensate for negative impact. However, it could be seen as a significant omission of the document that there is no more guidance on the subject of positive impact, particularly in the context of economic, social and cultural rights. The International Covenant on Economic, Social and Cultural Rights (ICESCR) establishes that state obligations for these rights are defined by making incremental progress towards full realization[145] and an understanding of corporate responsibility in this space cannot therefore be complete without an examination of positive impact.

While the UNGPs broadly neglect it, there has been a move towards including a positive impact when discussing corporate human rights responsibilities. The UN described in 2017 'a growing expectation for companies to not only respect human rights but also to explore opportunities to make a positive contribution in support of human rights.'[146] This rephrases the UN Global Compact (UNGC) idea of businesses being 'active stakeholders in societies' that should strengthen those societies by their positive actions,[147] and derives from the concept of rights promotion first announced in the Preamble of the UDHR.[148]

A closer analysis of legal and moral principles also suggests that corporate responsibilities extend beyond avoidance and mitigation of negative impact. Young holds that responsibility for alleviating social injustice, for example, should come more from an actor's ability to mitigate than from causal responsibility.[149] This question has also been considered in the context of climate change as part of the 'burden-sharing debate': the

[141] O'Faircheallaigh, note 126.

[142] Philippe Hanna et al, 'Improving the Effectiveness of Impact Assessment Pertaining to Indigenous Peoples in the Brazilian Environmental Licensing Procedure' (2014) 46 *Environmental Impact Assessment Review* 58; Nishima-Miller et al, note 101.

[143] Laurence Klein, María Jesús Muñoz-Torres and María Ángeles Fernández-Izquierdo, 'A Comparative Account of Indigenous Participation in Extractive Projects: The Challenge of Achieving Free, Prior, and Informed Consent' (2023) 15 *The Extractive Industries and Society* 101270.

[144] C Miller-Sabbioni et al, *The Foundations for Effective Indigenous Inclusion* (CRC TiME Limited, 2023).

[145] ICESCR, note 66.

[146] United Nations Office of the High Commissioner for Human Rights, 'Human Rights Translated 2.0: A Business Reference Guide' xi.

[147] United Nations Global Compact, *Guide to Corporate Sustainability: Shaping a Sustainable Future* (2014) 8.

[148] United Nations General Assembly, Universal Declaration of Human Rights (UN Doc A/RES/3/217A, 10 December 1948) ('*UDHR*').

[149] Iris Marion Young, 'Responsibility and Global Justice: A Social Connection Model' (2006) 23(1) *Social Philosophy and Policy* 102.

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'ability to pay principle' states that each agent should bear burdens according to their capacity to address a situation.[150] These considerations have obvious relevance to the relationship between extractive companies and communities, particularly in terms of making positive impacts on rights.

It has been noted above that the absence of the state in terms of guaranteeing the enjoyment of certain rights can lead to an effective privatization of those rights. Positive duties towards human rights have been discussed in the context of actual privatization—it is difficult to maintain that a company engaged in the provision of health or education services has no positive duties towards those rights, for example,[151] but the 'ability to pay' principle also suggests a corporate duty when the state is not fulfilling its obligations.

We can also derive responsibility towards certain rights-holders by the nature of the relationship with them. Ratner concludes that:

> the idea of equal respect for all humans, central in human rights theory and law, is consistent with the notion that, under certain circumstances, individuals and institutions owe greater duties to those with whom they have special associative ties than to others beyond that sphere.[152]

Miller refers to this as the 'communitarian principle': that associative ties create special responsibilities.[153] The close relationship between mining companies and their host communities should certainly be characterized as a 'special associative tie.'

Consideration of a responsibility for positive impact is crucial because, realistically, a majority of human rights are not fully realisable without companies making a positive impact, directly via employment in the case of the right to work, for example; indirectly via wages, investment or procurement, which can allow individuals and communities to realize rights to education, food and more; and taxes, which enable governments to protect the whole range of human rights, including civil and political rights.

This is particularly the case in the extractive context. Mines are often in remote regions where prospects of alternative employment are low and the state may inadequately guarantee economic, social and cultural rights. Extractive companies and their host communities are forced into a very close relationship and the company often takes on an outsized role in the provision of infrastructure and services that would normally be the responsibility of government.[154] In the lithium triangle, fieldwork revealed that as well as providing work through direct employment and procurement, companies were also providers of education and health infrastructure and services as well as other community development initiatives.[155] These involve a positive impact on the relevant economic, social and cultural rights. Interviewees also spoke of a positive impact on local culture by the availability of employment reducing the drain of young people from this remote region.[156]

In many cases, these positive impacts in the lithium triangle occur in the partial absence of the state, demonstrating another facet of rights being effectively 'privatized by absence'

[150] Laura García Portela, 'Connecting Climate Justice, Human Rights and Burden-Sharing: A Philosophical Perspective' (2020) 29(3) *Human Rights Defender* 11.

[151] Aoife Nolan, 'Privatization and Economic and Social Rights' (2018) 40(4) *Human Rights Quarterly* 815; Manfred Nowak, *Human Rights or Global Capitalism: The Limits of Privatization* (University of Pennsylvania Press, Philadelphia, 2016).

[152] Ratner, note 134, 507–8.

[153] David Miller, 'Distributing Responsibilities' (2001) 9(4) *Journal of Political Philosophy* 453, 462.

[154] E.g., Symington, note 10, 6.3.1.

[155] Ibid, 6.

[156] Ibid, 6.3.1.

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as introduced above. The right to education is a useful example of the state's absence in rights fulfilment driving company–community rights solutions. A Chilean Indigenous community leader described how faced with the nearest secondary school being 100–200 kilometres away, the communities had to find a solution themselves and established a heavily subsidized boarding house for students. In the absence of state funding, they asked a lithium mining company for help funding this program—that the company did so was described as a key step towards closer relations and greater company understanding of community needs.[157] This company engagement has an evident positive impact on the community's right to education. Across the border in Argentina, a remote village was in much need of a school, but the government refused to build one. The community and company collaborated to build it and finally persuaded the government to pay for some of the maintenance. The company continues to have various projects aimed at the sustainability of that school, which receives inadequate government support.[158] Nearly all companies interviewed in the lithium triangle quoted education as a priority and were funding schools and/or scholarships.[159]

The positive impact on human rights in the lithium triangle is very contextual. Each *salar* is very different and each of the lithium triangle communities has different priorities and needs. To take the Salar de Atacama as an example, fieldwork revealed a multiplicity of community priorities, with some demanding increased employment from the lithium projects, some seeing mining as impacting the tourism industry that they saw as a more sustainable future, and some wishing to focus on their sustainable agricultural development. In other *salares* community priorities also vary widely.

However, rather than accepting corporate social responsibility handouts as might have historically been the case, the trend in the lithium triangle is for communities to increasingly define their priorities in line with the principle of self-determination. Certain communities—in a region traditionally neglected by governments—have become increasingly empowered, and able to negotiate better agreements with companies. They have experienced a significant boost to certain economic, social and cultural rights by so doing.[160]

This again emphasizes the importance of the rights to consultation and FPIC. Just as they are 'gatekeeper rights' that operationalize self-determination and protect other human rights from violation, they are also key to identifying and maximising opportunities for positive rights impacts when operating in Indigenous territory. This makes clear that, in terms of the maximization of positive impacts, achieving a just transition in the lithium triangle again relates to the quality of the relationship between the mining company and the community.

However, it is crucial to note that any good outcomes from the company-community relationship in the lithium triangle are occurring despite the state's absence rather than because of it. While certain communities in the region are comparatively empowered and can effectively advocate for their rights and priorities, others lack this capability, which is often born of long experience of interaction with mining companies. Fieldwork revealed that some key success factors relate to community governance, capability and capacity, which vary widely across the region. Similarly, many companies in the region lack maturity in terms of community relations and social performance. For a just transition to occur, there is an urgent need for enhanced state presence as an active participant in the company-community relationship in order to bridge those gaps and effectively regulate and oversee

[157] Ibid, 6.3.5.
[158] Ibid, 4.4.2.
[159] Ibid, 6.3.1.
[160] Ibid, 7.

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extractive company conduct. There is also an important supporting role for other actors such as NGOs.

C. Equitable Distribution

'Volkswagen were here, speaking with me ... I told them many things. Electromobility is not going to arrive here, there's not going to be a Tesla parked here at my house. They know that.'[161]

Though it could be considered implicit in the first two parts of the just transition definition worked with here, it is important to emphasize the criticality of just transition of equitable distribution of risks and opportunities. There is a clear danger that the negative impacts of the transition—both on the 'transition from' side and the 'transition to' side—are felt largely by already vulnerable populations and the Global South, while the benefits and positive impacts accrue to the advanced economies of the Global North.

For example, the impact of the million job losses predicted still to occur in the context of closing coal mines through to 2050[162] are likely to be able to be less adequately mitigated in Global South economies. Similarly, impacts from the mining and processing of transition minerals will be felt predominantly in the Global South, as well as by vulnerable populations in Global North settler states, with a significant impact on Indigenous Peoples. Extractive industries are also particularly likely to cause skewed impacts whereby women and children are disproportionately negatively affected, while positive benefits such as employment accrue more to men.[163]

The rush of Global North companies to the lithium triangle is the latest chapter in a centuries-old story of South American extractivism, where the mineral wealth of the continent fuels manufacturing in other places and the dream of local prosperity from these reserves remains an illusion.[164] As Slipak notes of lithium: 'The narrative around the existence of a new source of limitless riches in the Argentine northwest reawakens an El Dorado viewpoint of the exploitation of resources in Latin America.'[165]

To be able to speak of a just transition here therefore requires us to go beyond positive rights impacts to consider equitable distribution, not only of the benefits of the extractive activity but also the benefits of the energy transition to which lithium is key.

Benefits of Extractive Activity

Extractive operations in Indigenous territory create a complex government–community relationship reflecting the broader dissonance of Indigenous territory and its associated rights being located within a sovereign state which can exercise power in that territory. State ownership of subsoil rights creates an inevitable conflict of interest: the state is both an interested party and a 'terrain of struggle.'[166] It also represents a power imbalance:

[161] Interview with Jorge Muñoz, Observatorio Plurinacional de Salares Andinos, February 2020.

[162] Ryan Driskell Tate et al, *Scraping By 2023: Global Coal Miners and the Urgency of a Just Transition* (Global Energy Monitor, October 2023), https://globalenergymonitor.org/report/scraping-by-2023-global-coal-miners-and-the-urgency-of-a-just-transition/.

[163] International Council on Mining and Metals, *Community Development Toolkit* (2012) 21.

[164] Galeano, note 56.

[165] Ariel Slipak, 'La extracción del litio en la Argentina y el debate sobre la 'riqueza natural'' in Bruno Fornillo (ed), *Geopolítica del Litio: Industria, Ciencia y Energía en Argentina* (Editorial el Colectivo, Buenos Aires, 2015) 91, 93–4.

[166] Anthony Bebbington, Jeffrey Bury and Emily Gallagher, 'Conclusions' in Anthony Bebbington and Jeffrey Bury (eds.), *Subterranean Struggles: New Dynamics of Mining, Oil and Gas in Latin America* (University of Texas Press, Austin, 2013) 282.

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Indigenous territorial rights are manifestly meaningless if mining occurs on Indigenous land without community consent.

ILO Convention 169 specifically considers the context of mining rights on Indigenous land:

> In cases in which the State retains the ownership of mineral or sub-surface resources or rights to other resources pertaining to lands, governments shall establish or maintain procedures through which they shall consult these peoples, with a view to ascertaining whether and to what degree their interests would be prejudiced, before undertaking or permitting any programmes for the exploration or exploitation of such resources pertaining to their lands. The peoples concerned shall wherever possible participate in the benefits of such activities, and shall receive fair compensation for any damages which they may sustain as a result of such activities (15.2).

The Inter-American Court has also discussed benefit-sharing, noting that the exploitation of a resource on Indigenous territory invoked the American Convention right to property even if it is not a resource traditionally used by that group, as long as there is some potential impact on other natural resources necessary for physical and cultural survival. The court found there was a state duty to 'allow the members of the community to reasonably participate in the benefits derived from' a mining concession.[167]

While this is framed as a state duty, evidence from the lithium triangle again suggests that this expectation is sometimes being transferred by the state onto mining companies, with the indirect role of the state mining entity the Chilean Economic Development Agency (CORFO) in the evolution of corporate benefit-sharing with communities in Chile's Salar de Atacama a key example. CORFO hold the mining rights in that area and concessions are granted to lithium mining companies via a contract. In the wake of Chilean ratification and promulgation of C169, rather than the state directly mandating Convention principles, renegotiation of those contracts due to an expansion of operations became a vehicle for pressure to be applied to companies to implement consultation processes and benefit-sharing arrangements.[168]

The ICMM has also discussed benefit-sharing, noting a need for companies to apportion positive benefits to communities 'regardless of whether the central government chooses to return a proportion of royalty payments and other mining revenues to the local community.'[169]

Fieldwork revealed a nuanced picture, with lithium triangle companies divided on the matter of direct community payments and varying opinions expressed. In the Atacama, the two operating lithium companies have had very different receptions to their community payment plans, both developed in the context of dynamics with CORFO mentioned above. However, there was engagement with communities in this sphere before government involvement: Rockwood/Albemarle first signed an agreement with its local community, Peine, in 2012, establishing a yearly payment through the lifecycle of the mine to 2043. This was followed by a four-year negotiation with the Consejo de Pueblos Atacameños (CPA), an organization representing the Indigenous communities of the Salar de Atacama region where the lithium project is located, which established—as part of a more comprehensive framework establishing environmental sustainability parameters—a yearly payment to the

[167] *Saramaka People v Suriname*, note 118, 155.
[168] Symington, note 10, 5.4.1.
[169] International Council on Mining and Metals, note 163, 16.

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18 communities in the region of 3.5 per cent of lithium sales,[170] an amount that has been resulting in annual total revenue for the communities of approximately US$15 million.

Contrastingly, the larger Atacama operation, SQM, have had more difficulties establishing the community payments required of them by CORFO, due to a history of poor community relations. Despite their expanded CORFO contract involving promising around US$15 million per year to local communities, many communities refused and the contract was also challenged in court for not having been previously consulted with communities.[171]

Other lithium triangle companies make similar if smaller direct payments or destine a percentage of sales to social responsibility. The Olaroz project of Arcadium Lithium,[172] for example, has some community payments but also fosters development via microloans so that locals can develop businesses like laundries, guesthouses and transport providers that then contract services to the company. This provides community members with access to borrowing that might otherwise be difficult, as property is often community-owned and community members typically have little to offer banks as loan guarantees.[173]

For a small Indigenous community, the sums involved in community payments can be substantial, leading to concerns of causing a negative impact. A company employee noted in a different mining context that 'the first thing generated by community payments was internal division.'[174] A common criticism of community payments was that they can warp and break social structure within or between communities.[175]

Atacama communities were very aware of the potential for significant community disruption and for many, signing the Rockwood/Albemarle agreement was a difficult decision. Reaching a consensus took four years:

> It is difficult to advise someone to take the money or not, very difficult. I believe that in some way it is necessary to have resources to be able to fulfil the dreams of people. In my community many of the older generation who would have wanted to see our new community hall [paid for from Albemarle payments] have already died … but this mining company money is letting us bring this dream true for those still alive … we want to have a place to gather, where we can hold cultural events, make music, keep our traditions. We need these things so [deciding whether to take the payments] is not easy at all.[176]

A community leader noted the effect of the first payments: 'It was too much money for a small community. No, not too much. What I mean is that—we are about 30 people—going from nothing to hundreds of thousands of dollars a year is a cultural shock. And an ethical shock. Many people start to look for personal benefit.'[177]

The money from the agreement has however enabled the CPA and its component communities to increase their effectiveness in terms of defending and advocating for

[170] Marcelo Valdebenito, 'La estrategia de Albemarle para impulsar una nueva minería sostenible del litio,' *ComunicarSe* (online, 6 August 2019), https://www.comunicarseweb.com/noticia/la-estrategia-de-albemarle-para-impulsar-una-nueva-mineria-sostenible-del-litio.

[171] Dave Sherwood, 'Inside Lithium Giant SQM's Struggle to Win over Indigenous Communities in Chile's Atacama,' *Reuters* (online, 14 January 2021), https://www.reuters.com/article/us-chile-lithium-sqm-focus-idUSKBN29K1DB.

[172] Operated by Orocobre at the time of research.

[173] Symington, note 10, Chapter 6.

[174] From fieldwork interview quoted in ibid, 183.

[175] Ibid, 6.3.4.

[176] From fieldwork interview quoted in ibid, 184.

[177] From fieldwork interview quoted in ibid.

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their rights and priorities, giving it resources to hire personnel that build the organization's capability for fighting to stop further Atacama mining projects.[178]

Some observers considered that company payments to communities give the government a reason to continue under-resourcing these remote regions, with one interviewee claiming that the Chilean state had deliberately pulled back in order to generate a situation where communities became reliant on agreements with mining companies.[179]

This is further evidence of the 'privatization by absence' of rights discussed throughout this paper. In the unsatisfactory absence of the state, both company–community payments and infrastructure projects can contribute to positive rights outcomes. However, community payments seem to more effectively operationalize the principle of self-determination and therefore grant communities a bigger say in defining those outcomes for their own rights.

A just transition in the lithium triangle necessarily involves some of the benefits of the lithium extraction being redistributed to the community.

Benefits of the Energy Transition

Participation in the benefits of extractive activity was discussed in the previous section, but a just transition implies that the benefits and opportunities of the transition itself must be equitably distributed in order to avoid the situation whereby the global North harvests the majority of the opportunities, and the risk is offshored to the global South.

The opportunities for the energy transition vary substantially in each category. For rural communities such as those in the lithium triangle, the relevant areas of opportunity can be defined as:

- Economic benefits from renewable energy projects or manufacturing
- Access to sustainable and affordable renewable energy

Economic benefits from renewable energy projects or manufacturing can include those deriving from employment and procurement. However, there is an increasing trend for Indigenous community equity, ownership or coownership of renewable energy projects. For example, nearly 20 per cent of projects in Canada now have Indigenous community ownership or participation.[180]

In the lithium triangle itself, there is not a huge amount of renewable energy infrastructure, although there is significant potential for small-scale solar, due to the climatic conditions.[181] There is, however, a sizeable solar plant at Caucharí in Argentina, constructed to take advantage of existing transmission infrastructure. It is government-owned and returns two per cent of profit to the local Indigenous community.[182]

Should there be a rollout of significant renewable energy infrastructure in the region then the rights to consultation and FPIC would apply. The fact that FPIC is now understood to

[178] Ibid, 7.6.1.

[179] From fieldwork interview quoted in ibid, 185.

[180] Canada Energy Regulator, 'Market Snapshot: Indigenous Ownership of Canadian Renewable Energy Projects Is Growing' (21 June 2023), https://www.cer-rec.gc.ca/en/data-analysis/energy-markets/market-snapshots/2023/market-snapshot-indigenous-ownership-canadian-renewable-energy-projects-growing.html.

[181] See, for example Gobierno de Jujuy, 'Plan Maestro Jujuy: Escuelas Rurales, Con Energía Solar Repotenciada' (online, 21 April 2022), https://prensa.jujuy.gob.ar/escuelas/escuelas-rurales-energia-solar-repotenciada-n106328.

[182] Daniel Gutman, 'Solar Power from Argentina's Puna Highlands Reaches Entire Country,' *Global Issues* (10 December 2020), https://www.globalissues.org/news/2020/12/10/27107.

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include principles such as equity stakes and the comanagement of projects[183] implies that for a just transition to occur, substantial Indigenous ownership of any renewable energy projects would be in place. However, because significant investment in transmission infrastructure would be required for further rollout of major renewable energy infrastructure in the region this scenario remains unlikely in the short term.

The second category of opportunities is about access to energy. The community that receives profits from the Caucharí solar farm is not connected to the grid,[184] as is the case for numerous others in the region. As diesel prices rise, remote lithium triangle communities are at risk of being exposed to significant impact as energy becomes increasingly unaffordable.

The significant potential for small-scale solar energy in the region suggests that a just transition must involve the communities of the lithium triangle gaining access to significantly subsidized solar panels and community-scale batteries in order to guarantee a sustainable future supply of cheap and reliable energy. This should include provisions for renewal of the technology as the panels approach the end of life.

Yet, while this should be a priority area for the involvement of lithium mining companies either via community development or communities spending benefit-shared funds, it should be clear that the state's obligations to fulfil the rights in question make it the principal duty bearer here. Once again a more robust government presence is required to guarantee a just transition in the region.

V. Success Factors for a Just Transition in the Lithium Triangle

The previous section has examined what would need to occur or be in place for a just transition to take place in the lithium triangle, analyzing requirements for each part of the just transition equation. This section summarizes and consolidates the analysis, dividing success factors that can help achieve that goal into two key themes, Indigenous self-determination and the role of the state.

A. Indigenous Self-determination

Common to all three parts of the just transition equation in the lithium triangle is the Indigenous right to self-determination. In the context of development and the extractive industries, this means the right to substantial control over what occurs on traditional territory. Respect for this right is a critical success factor for a just transition in the lithium triangle.

The Indigenous right to self-determination,[185] as discussed above, is operationalized by the rights to consultation and FPIC, articulated in C169 and UNDRIP respectively. The right to consultation is established in law in the lithium triangle and is a key community demand. However, it was widely observed that this state obligation is in practice often devolved to companies, effectively privatising this procedural right and putting companies and communities in direct contact over the parameters of projects with substantial potential impacts—negative but also positive—on communities, their environment and further rights.

[183] O'Faircheallaigh, note 126.

[184] Gutman, note 181.

[185] For a detailed discussion of the derivation and nature of this right, see Chapter 4 of Cathal M Doyle, *Indigenous Peoples, Title to Territory, Rights and Resources: The Transformative Role of Free Prior and Informed Consent* (Taylor & Francis Group, 2014), http://ebookcentral.proquest.com/lib/unsw/detail.action?docID=1864792.

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Another significant barrier is the gap between how self-determination is interpreted by Indigenous Peoples and by the state. Cambou notes that states 'fear that the recognition of self-determination will jeopardize the political unity and territorial integrity of the state as well as challenge its sovereignty over natural resources.'[186] Failures in the process of recognition of Indigenous territory are widespread in the lithium triangle region (see the following section),[187] with knock-on effects on the realization of Indigenous rights.

While this is of concern due to potential power, capability and capacity imbalances, there are other dynamics at play. A global reawakening of Indigenous identity in recent decades, combined with the articulation of Indigenous rights and the ability to exert reputational pressure on companies via social media and other actors in the value chain, has enabled some Indigenous groups to increase their power relative to corporations and governments, particularly in the extractive context.[188] Indigenous strategies to defend their rights and territories and pursue self-determination are key shapers of the company-community relationship in the lithium triangle[189] and thus critical elements of just transition. The ability of certain communities to create significant levels of project risk, including the potential to halt or stop extractive projects entirely—via advocacy, technical capacity, legal pathways and social conflict—is a key lithium triangle dynamic demonstrating the power of bottom-up processes in the region.[190] Community judicial strategies and activism have operationalized the right to FPIC and self-determination by stopping projects or aspects of them in the absence of that consent. Just transition in the lithium triangle therefore has a significant bottom-up component. This obliges companies to enhance their community relations processes to address the project risk (and potential reputational risk) generated by a failure to meaningfully engage with the rights to consultation and consent. Increased social performance also serves to assure downstream customers and other stakeholders in the value chain of the social sustainability of the mineral.

The lithium triangle fieldwork revealed some key success factors for communities to be able to wield effective bottom-up influence. Government recognition of community territory was felt by both communities and companies engaged with them to be a driver of better outcomes.[191] Lithium triangle governments appear less willing to recognize community territory in mining areas than in other regions, a lithium company interviewee noting that they probably believe extractive projects are more likely to happen without the interference of another powerful actor in the process.[192] However, lithium triangle evidence suggests the reverse can be true: that new projects may be more likely to be approved by Indigenous communities when there is greater control over territory.[193]

Most lithium triangle Indigenous communities have their governance processes that generally operate independently of state structures; where these were robust and representative, based on a consensus model, better outcomes seemed to ensue.[194] Cooperation between different communities and having a united front in negotiations

[186] Dorothee Cambou, 'The UNDRIP and the Legal Significance of the Right of Indigenous Peoples to Self-Determination: A Human Rights Approach with a Multidimensional Perspective Special Issue: The Tenth Anniversary of the United Nations Declaration on the Rights of Indigenous Peoples' (2019) 23(Issues 1–2) *International Journal of Human Rights* 34, 35.

[187] Symington, note 10, 7.3.

[188] See, for example, discussion of the Consejo de Pueblos Atacameños in ibid, 7.5–7.6.

[189] Ibid, 7.

[190] Ibid, 7.

[191] Ibid, 7.3.

[192] Ibid.

[193] Ibid.

[194] Ibid, 7.5.1.

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with government and companies, preferably via a representative organization or committee, also appeared crucial.[195] There is also an evident need for a reduction in capability and capacity gaps between communities and companies in advance of negotiations[196] and a prior consensus on what community expectations are from consultation and consent processes.[197]

A final key success factor is a clear and multi-pronged advocacy strategy that can exert both direct pressure on the mining company and indirect pressure via the value chain, courts and other avenues.[198]

In the absence of these, communities are at a disadvantage in negotiations with companies over mining projects. They must thus be seen as key success factors for realising the right to self-determination and therefore are critical to achieving a just transition.

However, the success of some of these bottom-up community-driven processes in enhancing self-determination also highlights the fact that the state is not adequately protecting the rights of these lithium triangle communities and that other communities in the region have not been able to shift traditional power dynamics.[199]

B. Role of the State

As regulation of corporate behaviour by communities will only be effective under certain conditions—including, in the lithium triangle, the presence of the drivers detailed above—bottom-up processes must be complemented by robust state protection of rights to guarantee a just transition. This is not, however, in place in the lithium triangle, where state absence is a key driver of the company–community dynamic and has created a *de facto* privatization of certain rights.[200]

We have seen that, while Indigenous rights such as consultation are treaty obligations of lithium triangle states, they are in practice substantially devolved to companies.[201] Similarly, benefit-sharing with communities as described in C169 implies a state duty rather than the principle being fulfilled by companies making direct community payments.

State absence also manifests in the context of the rights to water, health, education and others—often inadequately guaranteed in the remote Indigenous communities of the lithium triangle.[202] State absence, and the devolution of consultation to companies, means that certain lithium triangle companies have effectively become proxies for the state: their engagement with communities has become deeply relevant to various rights that have not been adequately fulfilled by government.[203] Key Indigenous rights and economic, social and cultural rights have effectively been 'privatized by absence' of the state, with companies investing in health or education infrastructure or providing benefits that enable communities to determine their development priorities.[204]

This has resulted in good outcomes for certain rights in certain lithium triangle communities.[205] But regarding the right to water, for example, mining companies are

[195] Ibid, 7.5.2.
[196] Ibid, 7.5.3.
[197] Ibid, 7.4.1.
[198] Ibid, 7.6.
[199] Ibid, 5.4.3.
[200] Ibid, 4.5.4.
[201] Ibid, 5.3.4.
[202] Ibid, 4.5.4; Babidge, note 88.
[203] Symington, note 10, 6.3.5.
[204] Ibid, 4.5.4; 6.3.5.
[205] Ibid, 6.3.

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potentially directly causing an impact: state absence in this context means that the only data on the effect of lithium extraction effect on the freshwater table have been in company hands, a state of affairs that understandably concerns communities. Generating baseline data and monitoring impact is a core state responsibility critical to achieving a just transition.

A traditional business and human rights compliance model envisions state presence as creating corporate compliance with rights via regulation. In the lithium triangle, however, this model is often reversed. State absence is regularly driving greater corporate engagement with communities, sometimes leading to better rights outcomes. While this may seem ironic, it is a function of the heightened ability of empowered Indigenous communities to create project risk. Where companies cannot rely on the state to mitigate that risk, their community engagement, along with internal corporate structure and culture, becomes key to managing and addressing that risk. However, as well as the crucial importance of mining companies understanding and acting on their responsibilities towards communities and their rights, enhanced state involvement is crucial to achieving a just transition in the region. This can be demonstrated by the fact that some of the key drivers of better outcomes in the lithium triangle have had a substantial state component as discussed above. Increased state involvement could only result in enhanced just transition outcomes.

These changing dynamics are resulting in another significant shift in traditional models of corporate behaviour. Regulation is often assumed to be a barrier to foreign investment,[206] and governments wishing to encourage investment still tend to streamline procedural requirements and reduce regulation in order to attract it. However, given the increased salience of social risk for projects and the increased stakeholder and broader societal expectations associated with it, evidence from the lithium triangle fieldwork suggests that some companies would welcome more government involvement in setting parameters and regulations in this area rather than reducing them.[207] This is especially so in the context of the supply chain. Where human rights and environmental standards are lower, more pressure is put on companies operating there to guarantee the social and environmental sustainability of their product. In this context, more robust government regulation may make a jurisdiction more, not less, attractive to foreign investment, suggesting a race to lower barriers is no longer an effective government response in this context.

Moreover, lithium mining companies are often single-project enterprises lacking the capability to develop and execute advanced community engagement strategies. Those companies with the most advanced processes in place have learned them over a long period of interaction with their local communities.[208] This learning process would undoubtedly be more effective and rapid with greater government involvement.

Inadequate or incomplete government recognition of Indigenous territory also seems to militate against good outcomes. Without a robust state process in place, it is often difficult for a company to navigate territorial claims, particularly when, as with some lithium triangle *salares*, claims may compete and/or overlap based on different traditional usages of territory. Even with a state process in place, companies must evaluate it against Indigenous community expectations. Fieldwork suggests that, while governments believe that recognition of community territory is a barrier to the success of extractive projects, the reverse can be true: new projects seem more likely to achieve the consent of local

[206] E.g., Deepak Lal, 'Taxation and Regulation as Barriers to International Investment Flows' (1999) 9(1) *Journal des Économistes et des Études Humaines* 3.

[207] Symington, note 10, 4.3.1; 6.3.5; 8.1.4.

[208] Ibid, 6.5.4.

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communities where there is greater control over territory and therefore project parameters.[209]

A fundamental shift in traditional extractive dynamics between companies, communities and governments is evident worldwide.[210] In the lithium triangle, it can be characterized as a shift in power towards local communities, a corresponding uplift in corporate community engagement in order to manage that relationship and mitigate an increasingly salient portion of project risk, and a situation where traditional extractivist responses by governments render the state a decreasingly relevant intermediary in that complex relationship.[211] It is lithium triangle governments that have been slowest to respond to the evolving power dynamics at the mine level.[212]

High consumer expectations of renewable technologies mean that lithium companies are more subject to reputational risk than some other miners,[213] suggesting that perhaps reputation-conscious downstream customers will mean that lithium companies will be held to a higher standard on social measures going forwards. Evolving legislation in the EU, including the Battery Regulation, will also require downstream companies to demonstrate social and environmental sustainability right back to the mine site.[214] However, the same criticality of lithium to the energy transition creates enormous pressure to bring new extractive projects online. As demand rises, governments scramble to not only secure supply for their key industries but to cash in on the boom.[215] The risk of downward pressure on environmental and social safeguards is high.

VI. Conclusion

Clearly, a just transition in the lithium triangle must not only involve a reduction of the environmental impact and its associated impacts on rights. It also requires that Indigenous communities' right to self-determination is respected and operationalized via the rights to consultation and FPIC. Mining can bring positive and negative impacts, and it is essential that communities are able to determine their development priorities and decide what goes on in their traditional territories. The principle of benefit-sharing articulated within C169 is also important in this context, as is collaboration between mining companies, working together with communities to mitigate rights impacts and enhance positive outcomes. Apportioning benefits of the transition itself to communities currently cut off from the energy grid is also fundamental.

Initiatives such as the Responsible Lithium Partnership,[216] which brings communities, mining companies and downstream customers together in an attempt to guarantee

[209] Ibid, 5.4.4; 7.3.

[210] Daniel M Franks et al, 'Conflict Translates Environmental and Social Risk into Business Costs' (2014) 111(21) *Proceedings of the National Academy of Sciences of the United States of America* 7576; Rachel Davis and Daniel Franks, *Costs of Company-Community Conflict in the Extractive Sector* (No 66, CSR Initiative at the Harvard Kennedy School, 2014); EY, *Top 10 Business Risks and Opportunities for Mining and Metals in 2022* (2022), https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/mining-metals/ey-final-business-risks-and-opportunities-in-2022.pdf.

[211] Symington, note 10, Chapters 6–7.

[212] Ibid, Chapters 4–5.

[213] Ibid, 6.4.2.

[214] *Battery Regulation*, note 52.

[215] E.g., Jonathan Gilbert and James Attwood, 'Argentina Is about to Unleash a Wave of Lithium in a Global Glut,' *Bloomberg.com*, https://www.bloomberg.com/news/articles/2024-06-28/argentina-is-about-to-unleash-a-wave-of-lithium-in-a-global-glut.

[216] BMW Group, 'BMW Group Joins Responsible Lithium Mining Project in Chile' (24 February 2022), https://www.press.bmwgroup.com/global/article/detail/T0370113EN/bmw-group-joins-sustainable-lithium-mining-project-in-chile.

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sustainable extraction, are steps in the right direction. However, in terms of a just transition, they will stand or fall on the extent to which the Indigenous communities participate in a meaningful FPIC process, giving consent to the extraction and providing a bottom-up guarantee that they regard the product as socially and environmentally sustainable. This bottom-up evaluation of rights impacts, providing product assurance to downstream customers, is the necessary counterpoint to risk-based human rights due diligence performed from the downstream end of the supply chain. It may not be easily achievable but is the only viable longterm pathway towards supply chain transparency and sustainability. Only when communities define the parameters of lithium extraction in their traditional territories and negative impacts on water and the environment are adequately mitigated can there be the talk of a just transition in the lithium triangle.

While this paper has focused on a specific region, the discussion is of relevance beyond that context. It is critical to emphasize that just transition is not a 'nice to have'—a value-add as we race to decarbonize the economy and mitigate the impacts of climate change. It is in fact critical to achieving that decarbonization. Protests around the mining of transition minerals and the deployment of renewable energy infrastructure are increasingly widespread and represent a serious risk to achieving decarbonization targets in time. While the right to FPIC pertains solely to Indigenous Peoples, it can be seen that achieving community buy-in is crucial no matter where the mine or energy project is located. Adequate information, genuine consultation and a strong consideration of positive impacts and equitable distribution of risks and opportunities are the elements of a just transition that must be met in order for there to be an in-time transition at all.

Competing interest. The author declares none.

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