

GLOBAL INFORMATION SOCIETY WATCH 2020

*Technology, the environment and
a sustainable world: Responses from
the global South*



ASSOCIATION FOR PROGRESSIVE COMMUNICATIONS (APC)
AND SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY (SIDA)

Global Information Society Watch 2020

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Operational team

Valeria Betancourt (APC)

Alan Finlay (APC)

Maja Romano (APC)

Project coordination team

Valeria Betancourt (APC)

Cathy Chen (APC)

Flavia Fascendini (APC)

Alan Finlay (APC)

Leila Nachawati (APC)

Lori Nordstrom (APC)

Maja Romano (APC)

GISWatch 2020 advisory committee

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Chat García Ramilo (APC)

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Arun M. (SPACE Kerala)

Florencia Roveri (Nodo TAU)

Y. Z. Yaú (CITAD)

Joan Carling (Indigenous Peoples Rights International)

Project coordinator

Maja Romano (APC)

Editor

Alan Finlay (APC)

Assistant editor and proofreading

Lori Nordstrom (APC)

Publication production support

Cathy Chen (APC)

Graphic design

Monocromo

Cover illustration

Matías Bervejillo



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LATIN AMERICA

WHITE GOLD, DIGITAL DESTRUCTION: RESEARCH AND AWARENESS ON THE HUMAN RIGHTS IMPLICATIONS OF THE EXTRACTION OF LITHIUM PERPETRATED BY THE TECH INDUSTRY IN LATIN AMERICAN ECOSYSTEMS



Gato.Earth

Danae Tapia and Paz Peña

<https://gato.earth>

Introduction

The exploitation of lithium in the so-called “lithium triangle” represented by the salt flats of Argentina, Bolivia and Chile shows how neoliberal logics have co-opted the concept of sustainable development.¹ Lithium is used to manufacture cutting-edge electronic devices that are central to a “green” idea of reducing the carbon footprint of industries. However, this extractivist arrangement is just a new phase of the capitalist and colonialist logic that has led us to the current climate emergency.

The ecological crisis – caused by the exploitation of natural resources – cannot be solved with more extractivism. In such a scheme, the environment continues to be seen as a commodity, the role of states is relegated to legally protect the private sector through cost-benefit analyses, and the developing world is reduced to a mine of resources for green technologies developed in the global North.

Focusing on the case of the exploitation of lithium in Chile and its ecological, economic and cultural impact, this report proposes that actors dedicated to the human rights agenda in the digital context have a duty to include in their concerns the material and ideological aspects related to the ways in which technological devices are produced, and their damaging effects on the environment and the local communities of the global South.

Context

The ecological collapse of fossil fuels has made it urgent to transition to a new energy paradigm that incorporates solar and wind energy. Lithium is crucial for this purpose. Since sunlight and wind are not continuous, storing the vast amounts of energy they produce is vital. As lithium is highly reactive and relatively light, it is an ideal material to conserve energy in batteries.

Electric cars, laptops, smartphones, and the many internet-of-things devices that are launched

daily onto the market, rely on lithium batteries. Lithium is central to an industry whose business model counts on obsolescence; therefore, the supply of this key mineral has to be secured for the many manufacturers based in the global North.

There are around 107 projects that mine lithium worldwide: more than 45% of them are in South America, specifically in the lithium triangle formed by Argentina, Bolivia and Chile. These projects are concentrated in four companies that cover around 91% of world production.² However, the mining of lithium has its limits. As the Chilean researcher Bárbara Jerez says:

The global lithium market boom has a limited horizon of about 15 more years, as other elements such as hydroxide, cobalt, graphene and other salts such as potassium – and even the salts that exist in cannabis – constitute potential replacements and competitors for the manufacture of rechargeable batteries for electric cars, the current main use of lithium.³

These gigantic extractivist operations in the Latin American region contradict the “green” image that tech companies want to promote, especially the electric cars business that has positioned its products as a central component to what ecological living should be. For example, Tesla, one of the leading manufacturers of electric cars, does not acknowledge the environmental impact of the massive extraction of lithium that its production chain requires. In fact, on the sustainability section of its website, it only addresses policies related to the recycling of used lithium batteries, which should be sent to a Tesla store by the customer.⁴

The lithium business has severe repercussions: irreversible damage to the ecosystem, dishonesty, and the sustained harassment of local communities. While few electric vehicle companies seem to

1 Castro, C. J. (2004). Sustainable Development: Mainstream and Critical Perspectives. *Organization & Environment*, 17(2), 195-225.

2 Dorador, C., & Román, J. (2018, 20 December). El espejismo del litio: el verdadero costo de la energía verde (parte 2). *Etilmercurio*. <https://www.etilmercurio.com/em/especial-etilmercurio-el-espejismo-del-litio-parte-2>

3 Bustamante Pizarro, R. (n/d). Bárbara Jerez y explotación del litio: “Los salares también son Zonas de Sacrificio”. *Causas y Beats*. <https://www.causasybeats.cl/movimiento-social/barbara-jerez-y-explotacion-del-litio-los-salares-tambien-son-zonas-de-sacrificio>

4 https://www.tesla.com/en_GB/support/sustainability-recycling

understand Chile's ecological disaster,⁵ the digital tech industry seems to be still ignoring this ecocide.⁶ Moreover, hardly any actors dedicated to technology and human rights have taken up this crisis as a reason for concern.

A green new sacrifice

The lithium triangle in South America is made up of the salt flats in the Andean desert, stretching across the three countries. In Chile, “the concentration of the brines and the extremely arid conditions of the Salar de Atacama are the main comparative advantages in relation to neighbouring countries; this, along with legal frameworks that authorise these aquifers to not be legally treated as groundwater, has permitted decades of low-cost extraction.”⁷ Beneath the salt flats in the Atacama, there is a vast natural underground saltwater reservoir containing dissolved lithium salts. Lithium is extracted by a massive exploitation of water resources through hydraulic mining. Drilling allows access to the saltwater deposits; then the brine is pumped to the surface and distributed to evaporation ponds to produce lithium carbonate that is collected and transformed into metallic lithium. Mining companies are also accessing scarce freshwater supplies in the desert because they need it to clean their machinery and produce a brine by-product, potash, which is used as a fertiliser.⁸

Although the brine's high salinity makes it unsuitable for human consumption, its exploitation affects human settlements and the ecological balance. One of the most controversial aspects of lithium exploitation is how the freshwater and brine deposits interact with the rest of the ecosystem, impacting negatively on water scarcity.⁹ The area is now facing a drought, which

Indigenous communities in the Atacama have drawn attention to for years. According to the Atacama People's Council (an entity representing 18 communities), during the last decade, rivers, wetlands and meadows have drained.¹⁰ In Peine, for example, the water is cut off at night; some days people do not have access to water and they must depend on water tank trucks.¹¹ Algarrobo trees and flamingos in the area are disappearing¹² and there are also changes in the unique microbial life of the Atacama Desert impacting on native flora and fauna.¹³

The drought that the area is facing today, and in which lithium mining operations have played a significant role, has also produced an economic crisis for the Indigenous inhabitants who end up being displaced. As Jorge Cruz from the town of Camar says: “It is increasingly difficult to cultivate. If it gets worse, we will have to migrate.”¹⁴ Unfortunately, since “green” technologies are presented as the only option to halt the climate crisis, and the lithium-ion battery market will experience a boom due to recent advancements in consumer electronics technologies, local communities will not cease to be victims of this ignored environmental, economic and political crisis.

Under the neoliberal zodiac sign

According to Mining Global, the two largest lithium producers worldwide – Albemarle and SQM – also have operations in Chile.¹⁵ This information is consistent with the historical extractivist approach that neoliberal governments in the global South have adopted, schemes in which economic benefit is only obtained through exploiting natural resources and

5 Sherwood, D. (2020, 11 February). Germany's Volkswagen and Daimler push for more 'sustainable' Chile lithium. *Nasdaq*. <https://www.nasdaq.com/articles/exclusive-germanys-volkswagen-and-daimler-push-for-more-sustainable-chile-lithium-2020-0>

6 Quitzau, A. (2020, 10 February). IBM Research is reshaping the scene of sustainable batteries. *IBM*. <https://www.ibm.com/blogs/nordic-msp/ibm-research-reshaping-scene-of-sustainable-batteries>

7 Morales Balcazar, R. (2020, 29 June). Lithium and socio-environmental conflicts in times of crisis: An opportunity to (re)think the transition. *Observatorio Plurinacional de Salares Andinos*. <https://observatoriosalares.wordpress.com/2020/06/29/lithium-and-socio-environmental-conflicts-in-times-of-crisis-an-opportunity-to-rethink-the-transition>

8 EnerNews. (2018, 14 August). Experto: Boom de litio no afecta al mercado de potasio / Interviewer GD. *EnerNews*. <http://enernews.com/318490/experto-boom-de-litio-no-afecta-al-mercado-de-potasio>

9 Wenjuan, L., Agusdinata, D. B., & Myint, S. W. (2019). Spatiotemporal patterns of lithium mining and environmental degradation in the Atacama Salt Flat, Chile. *International Journal of Applied Earth Observation and Geoinformation*, 80, 145-156.

10 Houmann Mortensen, N. (2019, 29 November). El lugar más árido del planeta está amenazado por culpa de la gran demanda de vehículos eléctricos y teléfonos inteligentes. *Climática*. <https://www.climatica.lamarea.com/la-sed-de-litio-amenaza-atacama>

11 Mössbauer, K. (2019, 4 November). Extracción del litio produce crisis hídrica en Peine-Atacama. *En La Línea*. <https://enlinea.cl/extraccion-de-litio-produce-crisis-hidrica-en-peine-atacama>

12 López Muñoz, M. (2017, 19 September). La delicada situación de los flamencos por la extracción del litio. *Facultad de las Ciencias Forestales y de la Conservación de la Naturaleza*. <http://www.forestal.uchile.cl/noticias/137019/la-delicada-situacion-de-los-flamencos-por-la-extraccion-del-litio>

13 Venegas, C. (2019, 2 December). Salares y acuíferos del norte en peligro. *Nueva Minería y Energía*. <https://www.nuevamineria.com/revista/salares-y-acuiferos-del-norte-en-peligro/>

14 Livingstone, G. (2019, 19 August). Cómo la apuesta de Chile por el litio está desatando una disputa por el agua en Atacama. *BBC*. <https://www.bbc.com/mundo/noticias-america-latina-49394020>

15 Benton, D. (2020, 9 August). Top 10 lithium producers. *Mining Global*. <https://www.miningglobal.com/top10/top-10-lithium-producers>

never taking part in value-add production chains that occur mostly in the North.¹⁶

Although South American governments have expressed an interest in being involved in the manufacture of batteries, this is a task that requires highly specialised workers, and more importantly, a geographical and political closeness to the countries with big centres of production of electric cars, mobile phones, laptops, etc.¹⁷ This resonates with the strategies promoted by the European Commission that focus on developing a local market that meets the huge upcoming demand for lithium-ion batteries;¹⁸ therefore it is fair to assume that the business of lithium in developing countries will stay as a merely extractivist operation, with the only incentive of mining to the maximum capacity.

While in documents (local laws on mining, for instance), governments accept that lithium is a strategic and finite commodity that should only be exploited by the Chilean state, these notions are not really enforced. Through exceptional agreements, the Chilean government has accepted the intervention of private companies in these mining operations. Many of them are based in Canada, China or the United States, and the Chilean actors are former state companies that were privatised during US-backed authoritarian regimes and now are in the hands of a few oligarchs.¹⁹

The privatisation of state companies is an unequivocal mechanism of neoliberal regimes. It happened in the United Kingdom during Thatcherism, and it has happened in Latin America every time the US has intervened in local politics to overthrow governments that do not align with their neo-imperialist interests. This mechanism, in the Latin American region, is generally focused on the ownership of natural resources. It happened in Honduras to gain control of hydric resources,²⁰ it is happening in Bolivia with the coup against the Indigenous president Evo Morales to gain control of

lithium (as was admitted by “tech entrepreneur” Elon Musk),²¹ and it happens in Chile because of the legacy of the fascist dictatorship of Augusto Pinochet implanted by the US State Department.

After what Naomi Klein calls “shock doctrines”²² occur, neoliberal regimes develop sophisticated discourses in which they disguise their structures of corporate looting as sustainable and participatory development practices. Researcher Bárbara Jerez provides an example explaining how lithium companies in Chile have created a concept of “shared value” with local communities, most of them in precarious economic conditions, in order to gain licences for the exploitation of territories. This is done through the creation of false benefits and disinformation.²³

Profit-centred visions see natural resources as mere commodities, while Indigenous populations generally adopt a more animistic perspective in which every component of the ecosystem, the rivers, the mountains, etc. are living entities that should not be exploited. This is why many land defenders and environmentalist leaders belong to Indigenous communities. Their struggle is a clear example of the neocolonial tensions in the region. Theirs is a type of political dispute that cannot be solved through the Western logics of economics.²⁴ Moreover, to understand these conflicts, it is necessary to acknowledge the enormous power imbalance between both groups, an asymmetry that has led to the assassination and harassment of activists, as well as the irreversible destruction of local ecosystems.

Digital communications are built upon exploitation

For science, technology and society (STS) studies, technology is a system made of artefacts, social practices and knowledge systems. The STS theory is centred on the idea that technology and society co-constitute each other; they are inseparable.

16 Acosta, A. (2013). Extractivism and neoextractivism: Two sides of the same curse. In M. Lang & D. Mokrani (Eds.), *Beyond Development: Alternative Visions from Latin America*. Transnational Institute & Rosa Luxemburg Foundation. <https://www.tni.org/en/publication/beyond-development>

17 Barría, C. (2019, 21 June). El triángulo del litio: 3 obstáculos que enfrentan Argentina, Bolivia y Chile para escapar de la “maldición de los recursos naturales”. *BBC*. <https://www.bbc.com/mundo/noticias-48666235>

18 https://ec.europa.eu/jrc/sites/jrcsh/files/jrc114616_li-ion_batteries_two-pager_final.pdf

19 Sanderson, H. (2018, 5 June). Chilean billionaire Ponce Lerou rejoins lithium producer SQM. *Financial Times*. <https://www-ft-com.eur.idm.oclc.org/content/225ab6a4-68e4-11e8-b6eb-4acfcfb08c11>

20 Lakhani, N. (2020). *Who Killed Berta Cáceres? Dams, Death Squads, and an Indigenous Defender's Battle for the Planet*. Verso.

21 Telesur. (2020, 25 July). Elon Musk Confesses to Lithium Coup in Bolivia. <https://www.telesurenghlish.net/news/elon-musk-confesses-to-lithium-coup-in-bolivia-20200725-0010.html>

22 *The Shock Doctrine: The Rise of Disaster Capitalism*, a 2007 book by Naomi Klein, argues that neoliberal policies gain a foothold in developed countries through a strategy of “shock therapy” that exploits natural crises to implement questionable policies. <https://tsd.naomiklein.org/shock-doctrine.html>

23 Bustamante Pizarro, R. (n/d). Op. cit.

24 Wright, R. M., Kapfhammer, W., & Braune Wiik, F. (2012). The clash of cosmographies: indigenous societies and project collaboration – three ethnographic cases (Kaingang, Sateré-Mawé, Baniwa). *Vibrant: Virtual Brazilian Anthropology*, 9(1), 384-450. http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1809-43412012000100014

Instead of analysing technology as an artefact, the study focuses on sociotechnical systems.²⁵

Today, sociotechnical analyses of the ecological impact of digital technologies are almost non-existent in the hegemonic human rights community working in the digital context. Dominated by a liberal framework, the material conditions of production of technological devices that allow digital communications are still ignored in the analysis of the impact of technology on human rights. This omission only favours the old capitalist, extractivist and colonial interests that still dominate the digital revolution.

Even if some initiatives have emerged in this community in the last few years, most of them are attached to the UN agenda of Sustainable Development Goals.²⁶ Yet several aspects of this agenda are worrisome. For example, the tech industry has come up with the idea of a “sustainable internet”²⁷ or “sustainable web”,²⁸ a global North framework to reduce carbon emissions, but one incapable of having a more critical perspective to incorporate a social justice agenda. As the Chilean case of lithium exploitation shows, “green” approaches that will help the tech industry to have zero carbon emissions are compatible with extractivist logics that are extremely damaging to the environment. And while we understand that technologies will be needed in the fight against global warming, the neoliberal ideology of “technosolutionism” (as a silver bullet that will solve all the problems thanks to the innovation of individuals) is still dominant within the community.²⁹

At the 2020 edition of the RightsCon conference, an important event for the digital rights community that claims to be a meeting point for civil society, governments and the private sector, not one of their more than 270 sessions was dedicated to the neocolonial extractivism promoted by the tech industry. The topic of climate was barely addressed and the few sessions on the climate crisis were led by actors from the global North. These were related to topics such as the

activism of Extinction Rebellion; some researchers from New York University were trying to solve the question “Is climate change an emergency?”; and a French private company that sells tools to measure emissions hosted a panel on markets, startups and their risks during the climate crisis.³⁰ This is an example that demonstrates the huge challenge in terms of climate justice that this community has ahead.

Conclusions

The tech industry is responsible for a massive ecocide that is taking place in the lithium triangle, and actors dedicated to human rights in digital environments are not paying any attention to this abuse. The case of lithium demonstrates that hegemonic digital technologies are part of an ideological complex in which technosolutionism is spurred, and one that never promotes a participatory, democratic and decolonial change in our development models.

Furthermore, a human rights agenda in the digital context must be cautious about the greenwashing operations that tech corporations do today.³¹ These actions have to be critically analysed taking into consideration the constant geopolitical impact of tech development on communities of the global South. It is not acceptable to engage in these PR strategies without acknowledging that the extractivist and colonialist logics present in the exploitation of lithium in Argentina, Bolivia and Chile are made to satisfy “green” consumerism from the global North.

In our context of climate crisis and massive extinction of species, we believe that there are three urgent challenges with regards to technology. One is to analyse the ecological and ideological conditions behind the development of hegemonic digital technologies. Another is to join an urgent global agenda for a decolonised democratic and sustainable transition to clean energy, translating this challenge into the field of digital technologies.³² And, finally, to be especially vigilant with the new “sacrifice zones”, as is the case of the salt flats in Chile, areas which are currently invisible to liberal activism despite their function as the fuel of a new stage in colonial capitalism: the development of “green” technologies.

25 Johnson, D. (2010). Sorting Out the Question of Feminist Technology. In L. L. Layne, S. L. Vostral & K. Boyer (Eds.), *Feminist Technology*. University of Illinois Press.

26 Internet Society. (2015). *The Internet and Sustainable Development*. <https://www.internetsociety.org/resources/doc/2015/the-internet-and-sustainable-development/>

27 <https://wiki.mozilla.org/Projects/Sustainability/Glossary>

28 Greenwood, T. (2019, 10 May). Introducing the Sustainable Web Manifesto. *Wholegrain Digital*. <https://www.wholegraindigital.com/blog/introducing-the-sustainable-web-manifesto>

29 Sherriff, L. (2020, 8 April). Hackathons: An inclusive way to tackle the climate crisis? *DW*. <https://www.dw.com/en/hackathons-an-inclusive-way-to-tackle-the-climate-crisis/a-52966234>

30 <https://www.rightscon.org/program>

31 Zero Cool. (2019, 7 December). Oil is the New Data. *Logic*. <https://logicmag.io/nature/oil-is-the-new-data/>

32 Morales Balcazar, R. (2020, 29 June). Op. cit.

Action steps

The following steps are necessary for civil society activists:

- Activists and researchers at the intersection of human rights and technology must create strategies for accountability of the environmental impact of digital corporations, adopting a critical perspective towards devices and technologies that claim to be “green”. This should take into consideration issues of neoliberal neocoloniality and promote respect for non-Western cosmologies.
- Civil society organisations dedicated to digital rights must address the harassment and surveillance of local communities, and the deceit practices by mining giants in these communities, and should develop digital security strategies for their protection.
- Of course, these proposed advocacy steps have to involve people from the affected geographies, who should be at the centre of strategising and in decision-making roles, in order to gain legitimacy and to not replicate the power imbalances of neocolonial realities.

Technology, the environment and a sustainable world: Responses from the global South

The world is facing an unprecedented climate and environmental emergency. Scientists have identified human activity as primarily responsible for the climate crisis, which together with rampant environmental pollution, and the unbridled activities of the extractive and agricultural industries, pose a direct threat to the sustainability of life on this planet.

This edition of Global Information Society Watch (GISWatch) seeks to understand the constructive role that technology can play in confronting the crises. It disrupts the normative understanding of technology being an easy panacea to the planet's environmental challenges and suggests that a nuanced and contextual use of technology is necessary for real sustainability to be achieved. A series of thematic reports frame different aspects of the relationship between digital technology and environmental sustainability from a human rights and social justice perspective, while 46 country and regional reports explore the diverse frontiers where technology meets the needs of both the environment and communities, and where technology itself becomes a challenge to a sustainable future.

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2020 Report

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