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**Promotion and protection of all human rights, civil,
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including the right to development**

Visit to Chile

Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, David R. Boyd*

Summary

The Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, David R. Boyd, visited Chile from 3 to 12 May 2023 at the invitation of the Government. The purpose of the visit was to examine how Chile has been implementing the right to a clean, healthy and sustainable environment, to identify good practices and to investigate the environmental challenges that the country faces. Chile has a strong new climate change law and deserves credit for leadership related to closing coal-fired power plants, generating solar electricity and protecting a large proportion of its marine territory. Ongoing challenges include sacrifice zones, air pollution, access to safe and sufficient water, adapting to the climate crisis and effectively implementing environmental laws and policies. Among his recommendations, the Special Rapporteur encourages Chile to substantially increase the budget of the Ministry of the Environment, clean up the notorious sacrifice zones, strengthen air quality standards, reverse the privatization of water, continue to accelerate renewable energy generation and shift towards a circular economy.

* The summary of the report is being circulated in all official languages. The report itself, which is annexed to the summary, is being circulated in the language of submission and Spanish only.



Annex

Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment on his visit to Chile

I. Introduction

1. The Special Rapporteur on the human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, David R. Boyd, visited Chile from 3 to 12 May 2023 at the invitation of the Government. The purpose of the visit was to examine the country's progress in implementing the right to a clean, healthy and sustainable environment, to identify good practices and to consider the environmental challenges that the country faces.

2. Chile is a geographically diverse and beautiful country facing daunting and interconnected environmental crises that have disastrously affected human rights for many years, dating back to the military dictatorship. Those crises include: sacrifice zones in which marginalized and vulnerable communities suffer extreme exposure to toxic substances and environmental degradation; water scarcity, as many rural residents lack regular and secure access to safe and sufficient water; and debilitating, even deadly, air pollution. Chile is also suffering major impacts due to the global climate crisis, including droughts, desertification, devastating wildfires, deadly heatwaves, sea-level rise, coastal erosion and the increasing intensity of extreme weather events (e.g. heavy rains and floods).

3. Despite those daunting challenges, the Special Rapporteur was encouraged by the warmth, generosity and passion for human rights and environmental protection of the Chilean people whom he met. He would like to express his gratitude to the Government of Chile for the invitation and excellent cooperation before, during and after the visit. The current government ratified the Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean (Escazú Agreement), has already taken some important steps to address the environmental crises and additional actions are in progress. However, the scale and pace of implementation are still too slow, not adequately resourced and not compliant with the country's human rights obligations.

4. Over the course of his visit, the Special Rapporteur met with the Minister of Health, the Minister of Justice and Human Rights, the Minister of Mining, the Minister of the Environment, the Superintendent of the Environment, the Director of the Environmental Evaluation Service, the Undersecretary of the Environment, the Undersecretary of Foreign Affairs, the Undersecretary of the Economy and Small Business, the Undersecretary of Finance and officials from these ministries. He also met with the President of the Supreme Court, members of the Constitutional Court, members of the Second Environmental Court, members of the Office of the National Prosecutor, the National Human Rights Institute, local officials, including the Mayors of Quintero, Puchuncaví and Concón, Indigenous Peoples, civil society, representatives from United Nations agencies, local community activists, trade unionists, academics, children, youth and the private sector.

5. In addition to several days in Santiago, the Special Rapporteur travelled to numerous places, including Concón, Quintero and Puchuncaví in the central region and Calama and San Pedro de Atacama in the northern region. He visited the lithium extraction site in Salar de Atacama operated by Sociedad Química y Minera de Chile. He also visited Puerto Montt in the southern region, where he saw some of the industrial salmon farming sites in Reloncaví Sound.

6. Unfortunately, the Special Rapporteur's conversations with more than 100 concerned persons from all regions of Chile and all walks of life revealed glaring long-term violations of their right to live in a clean, healthy and sustainable environment. In many cases, those violations have endured for decades, leaving people disempowered and disheartened.

7. The Special Rapporteur smelled the toxic fumes of industry in Ventanas and felt them in his throat. He listened to the testimony of mothers, tears rolling down their cheeks, who were afraid to send their children to school because of recurring toxic disasters. In Quintero, young girls presented him with drawings that said “I’m afraid of dying from poisoning” and “we are breathing poison and nobody cares”. He saw maps of dramatically elevated arsenic levels in the Quintero-Puchuncaví region, which scientists described as posing “unacceptable” cancer risks to children.¹ He learned that dust from the tailings of mines in the northern region poses a risk to the health of people, especially children, living downwind of these environmental risks.² In the words of scientists, “measures to mitigate the potential adverse effects on children’s health in Alto El Loa should be undertaken urgently”.³ He also heard the impassioned pleas of Indigenous Peoples seeking respect for their rights and their territories.

II. Legal and policy framework

A. International law and policy

8. The Special Rapporteur would like to commend Chile for having ratified all core international and regional human rights treaties, including the International Covenant on Economic, Social and Cultural Rights, the International Covenant on Civil and Political Rights, the International Convention on the Elimination of All Forms of Racial Discrimination, the Convention on the Elimination of All Forms of Discrimination against Women, the Convention on the Rights of the Child, the Convention on the Rights of Persons with Disabilities and the International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families. Similarly, at the regional level, Chile has ratified the American Convention on Human Rights. However, Chile has not ratified the Optional Protocol to the International Covenant on Economic, Social and Cultural Rights, and is encouraged to do so.

9. Furthermore, Chile has ratified all the major global environmental treaties, including the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement. Chile submitted an enhanced nationally determined contribution in 2020 (see below under “climate change”). Since 2022, Chile has been a party to the Escazú Agreement.

B. National legal context

10. In 1980, Chile recognized in its Constitution the human right to an environment free from contamination and this right is judicially enforceable (through the recourse of protection) since 2005.⁴ Article 19 (8) of the Constitution also provides that: “It is the duty of the State to ensure that this right is not jeopardized and to promote the preservation of nature.” The General Environmental Framework Act (No. 19300 of 1994) reiterates the right to live in an environment free of contamination and defines a pollution-free environment as that in which pollutants are found in concentrations and periods of time lower than those capable of causing a risk to people’s health, the quality of life of the population, the preservation of nature or the conservation of environmental assets.

11. The draft constitution that was rejected in a referendum in September 2022 included strong proposals related to nature and the environment. Those were among the more popular elements with the Chilean public, so it is hoped that many will eventually be incorporated

¹ Jaime Tapia-Gatica and others, “Advanced determination of the spatial gradient of human health risk and ecological risk from exposure to As, Cu, Pb, and Zn in soils near the Ventanas Industrial Complex (Puchuncaví, Chile)”, *Environmental Pollution*, vol. 258 (March 2020).

² Nicolás C. Zanetta-Colombo and others, “Impact of mining on the metal content of dust in indigenous villages of northern Chile”, *Environment International*, vol. 169 (November 2022).

³ *Ibid.*, p. 9.

⁴ Arts. 19 (8) and 20. See also Act No. 20050 (26 August 2005).

into a new constitution.⁵ Chile has the opportunity to be the first nation in the world to have a constitution using the language agreed upon by the United Nations, namely the human right to a clean, healthy and sustainable environment.⁶

12. The Supreme Court, the Constitutional Court and the Environmental Courts have embraced a broad understanding of the right to live in an environment free from contamination.⁷ However, the Government must do more to respect and implement the decisions and orders made by those courts. The State has been slow in responding to the 2019 Supreme Court decision involving massive pollution and the poisoning of children in Quintero-Puchuncaví, as confirmed by both the Comptroller-General and the National Human Rights Institute. In fact, the Supreme Court recently issued additional decisions involving ongoing pollution in Quintero-Puchuncaví, ordering the Government to expedite remedial action.⁸ There are also troubling delays in access to justice, in part due to a lack of resources, a lack of free legal and technical services for individuals and communities whose right to a healthy environment is being threatened or violated and, in the case of the Environmental Courts, a slow judicial appointment process that has failed to ensure a full complement of judges.

13. In recent years, Chile has adopted important new laws and policies, including the Framework Act on Climate Change, the Urban Wetlands Act, the Single-Use Plastics Act, the creation of the Biodiversity and Protected Areas Service and a law that establishes a much wider range of environmental crimes. Efforts are under way to enact a package of green tax reforms and also to strengthen the General Environmental Framework Act by adding key principles of environmental law. The Buen Vivir plan focuses on Indigenous rights and land restitution.

14. Unfortunately, there are critical gaps and weaknesses in the country's environmental laws and standards. A key example involves air quality, for which at least eight Chilean standards are substantially weaker than those of the World Health Organization (WHO), although several are under review. The Chilean annual standard for fine particulate matter (PM_{2.5}) is 20 µg/m³, which is four times higher than the WHO guideline. The Chilean annual standard for nitrogen dioxide was recently improved to 40 µg/m³, which is still four times higher than the WHO guideline. The Chilean standard for sulphur dioxide (SO₂) is 150 µg/m³ compared with the WHO guideline (24 hours) of 40 µg/m³. Another important example is the absence of standards for contaminants in soil, such as lead and cadmium. A soil standard for arsenic was created in 2023. There are gaps in air quality standards for arsenic, a well-known carcinogen, and volatile organic compounds (although the gap for benzene was recently addressed). Chile also allows the use of some highly hazardous pesticides, which threaten both human and ecosystem health, which are prohibited in most Organisation for Economic Co-operation and Development (OECD) nations.

15. Another example involves the need for stronger water quality standards. Compared with the WHO standards for drinking water, Chilean regulations include fewer contaminants (especially pesticides). Among contaminants that do have standards in Chile, the WHO guidelines are up to 20 times more stringent.⁹ Chile also lacks a law to protect its critically important glaciers. As a general principle, Chile should move rapidly to strengthen the full range of environmental standards to be consistent with WHO recommendations and best practices in OECD nations and progress is under way.

16. As mentioned above, in 2022, Chile ratified the Escazú Agreement, which imposes obligations on the country to improve access to environmental information, strengthen public participation in environmental decision-making, facilitate access to justice and implement protection for environmental human rights defenders. That provides an incredible

⁵ Centro de Estudios Públicos, *Estudio Nacional de Opinión Pública, Noviembre-Diciembre 2022: Encuesta CEP 88 (2023)*, p. 32.

⁶ General Assembly resolution 76/300 and Human Rights Council resolution 48/13.

⁷ Constitutional Court, Case No. STC-9418-20-INA, Judgment, 15 June 2021.

⁸ Supreme Court, Case No. 149.171-2020, Judgment, 26 May 2023; and Case No. 118802-2023, Judgment, 26 May 2023.

⁹ Paulina Pino and others, "Chile confronts its environmental health future after 25 years of accelerated growth", *Annals of Global Health*, vol. 81, No. 3 (2015), pp. 354–367.

opportunity to advance the realization of those rights and strengthen the environmental assessment process.

C. Political structure and economy

17. Chile has a long history of representative democracy. From September 1973 to March 1990, however, a military junta headed by Augusto Pinochet Ugarte presided over the longest period of authoritarian dictatorship in Chilean history. Since 1990, Chile has been a democracy.

18. Chile is a member of OECD, a high-income country according to the World Bank and ranks in the “very high” category on the human development index. On the other hand, Chile is still plagued by staggering levels of inequality. A striking example is that 49.6 per cent of wealth is concentrated in the richest 1 per cent of the population, while 80.4 per cent of wealth is held by the richest 10 per cent.¹⁰ The coronavirus disease (COVID-19) pandemic exacerbated inequality, especially affecting women, Indigenous People, people of African descent, migrants, refugees, children, youth, persons with disabilities, older persons, LGBTQ+ persons, people living in rural areas and people living in poverty. Individuals at the intersection of two or more of those categories face heightened risks.

19. The Government Development Plan 2022–2026, which is closely aligned with the 2030 Agenda for Sustainable Development, proposes a road map for overcoming inequalities and realizing economic, social and cultural rights. It also promotes inclusive growth with environmental sustainability and climate action. The Government Development Plan, created through a participatory process of public consultations, incorporates four transversal perspectives, including feminism, the concept of a just ecological transition, decentralization and decent work.¹¹

20. The successful outcome of such an ambitious plan and other environmental initiatives, including actions to address sacrifice zones, air pollution and water scarcity, will depend on the provision of substantially more resources to the Ministry of the Environment. For the year 2023, the Ministry of the Environment received approximately 0.10 per cent of the State budget (equivalent to 74.5 billion Chilean pesos).¹² Although that budget grew by 11 per cent in 2023 through the Sustainable Productive Development Programme, it is far from sufficient and far below other high-income nations. Environmental taxes – a key mechanism for implementing the polluter pays principle – are also very low, although important green tax reforms are being discussed.

III. Fulfilling the right to a clean, healthy and sustainable environment

21. The role of the Special Rapporteur is to promote the implementation of obligations relating to the right to a clean, healthy and sustainable environment so that everyone, everywhere can fully enjoy this right. This fundamental human right, supported by Chile in recent United Nations resolutions, includes clean air, safe and sufficient water, healthy and sustainably produced food, non-toxic environments, healthy biodiversity and ecosystems and a safe climate. It also includes rights of access to environmental information, public participation in environmental decision-making and access to justice with adequate remedies.

A. A safe climate

22. The world is embroiled in a climate emergency, with severe impacts on human rights across the planet, the scale of which threaten to increase almost unimaginably in the coming

¹⁰ See www.statista.com/statistics/1294731/distribution-wealth-by-percentile-chile.

¹¹ Government of Chile and United Nations Chile, *Marco de Cooperación de las Naciones Unidas para el Desarrollo Sostenible en Chile 2023–2026* (2023) (in Spanish).

¹² See www.bcn.cl/presupuesto/periodo/2023/partida/25 (in Spanish).

years. The need for rapid decarbonization is clear – States must eliminate their dependence on fossil fuels as quickly as possible while protecting and restoring the planet’s natural carbon sinks, simultaneously safeguarding the human rights of all persons affected. In the unforgettable words of the Secretary-General, “Humanity has opened the gates to hell ... We have a choice. Collective action or collective suicide. It is in our hands.”¹³

23. Chile is acutely vulnerable to the adverse impacts of climate change, including worsening droughts, desertification, wildfires, heatwaves, sea-level rise, coastal erosion and the increasing intensity of extreme weather events.¹⁴ Reduced snowfall in the Andes has resulted in unprecedented reductions in river flow, reservoir volumes and groundwater levels.¹⁵ The glaciers of the southern Andes are melting faster than any other glaciers in the world.¹⁶ Evidence indicates that mining in and around the glaciers of Chile causes not only substantial environmental damage, but accelerates the melting of these glaciers, which are critical for the country’s water supply.¹⁷ The number of heatwaves in Chile is expected to increase 5 to 10 times in the northern region, harming people’s physical and mental health.¹⁸ In a report published in 2021, the Intergovernmental Panel on Climate Change warned that continued drought conditions in Chile were highly likely to exceed anything seen in the previous 1,000 years and would push soil moisture to the lowest levels in a millennium.¹⁹

24. The impacts of climate change on water scarcity have immense implications for the human rights to water, food and a clean, healthy and sustainable environment. In adapting to climate change, it is imperative that Chile take preventive and precautionary measures to ensure safe and sufficient water for everyone, prioritizing the human rights of those people whose rights are currently not being fulfilled.

25. The good news is that Chile has an excellent Framework Act on Climate Change and outstanding renewable energy potential. The nearly cloudless Atacama Desert has the best solar electricity generating potential of any place on Earth, although additional transmission infrastructure is needed to be able to fulfil its potential. The country’s 110 MW Cerro Dominador facility is the first commercial concentrated solar power plant in Latin America and incorporates thermal energy storage (using molten salts), enabling it to produce electricity 24 hours a day.

26. Chile already produces a higher proportion of its total electricity from solar than any other nation in the world (18 per cent).²⁰ Chile more than doubled its renewable electricity capacity between 2012 and 2022, going from 7,650 MW to 18,801 MW.²¹ Most impressively, solar skyrocketed from 2 MW to 6,250 MW, third in Latin America after Brazil and Mexico. Wind also grew exponentially from 202 MW to 3,830 MW. Geothermal grew from zero to 51 MW, the fifth highest in Latin America. The cost of energy generated by solar and wind

¹³ See <https://news.un.org/en/story/2023/09/1141082> and <https://press.un.org/en/2022/sgsm21376.doc.htm>.

¹⁴ Rocío Urrutia-Jalabert and others, “Climate variability and forest fires in central and south-central Chile”, *Ecosphere*, vol. 9, No. 4 (2018); Adrian Piticar, “Changes in heatwaves in Chile”, *Global and Planetary Change*, vol. 169 (October 2018); and Carolina Martínez and others, “Coastal erosion in central Chile: a new hazard?”, *Ocean & Coastal Management*, vol. 156 (April 2018).

¹⁵ René D. Garreaud and others, “The 2010–2015 megadrought in central Chile: impacts on regional hydroclimate and vegetation”, *Hydrology and Earth System Sciences*, vol. 21, No. 12 (2017).

¹⁶ Intergovernmental Panel on Climate Change, *Climate Change 2022: Impacts, Adaptation and Vulnerability – Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge, United Kingdom of Great Britain and Northern Ireland, Cambridge University Press, 2022), p. 1714.

¹⁷ Martina Barandun and others, “Anthropogenic influence on surface changes at the Olivares glaciers; Central Chile”, *Science of the Total Environment*, vol. 833 (10 August 2021).

¹⁸ Intergovernmental Panel on Climate Change, *Climate Change 2022*, p. 1714.

¹⁹ Intergovernmental Panel on Climate Change, *Climate Change 2021: The Physical Science Basis – Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge, United Kingdom, and New York, United States of America, Cambridge University Press, 2021), p. 1122.

²⁰ See www.energymonitor.ai/tech/renewables/the-worlds-top-ten-solar-power-superpowers.

²¹ International Renewable Energy Agency, *Renewable Capacity Statistics 2022* (Abu Dhabi, 2022), p. 40.

has fallen 88 per cent and 68 per cent, respectively, since 2010.²² All of that suggests that Chile has the ability to generate 100 per cent of its electricity from renewables, while at the same time the lower costs should benefit low-income households that struggle with energy poverty.

27. However, there is an essential prerequisite for the development of the country's renewable energy potential, which is fulfilling its human rights obligations. That means providing the public with clear, accessible information, as well as opportunities to participate in decision-making processes. Additional efforts must be made to include communities that may be in situations of vulnerability or marginalization. If renewable energy projects are going to be built in the traditional territory of Indigenous Peoples, their right to free, prior and informed consent must be respected from the very outset of planning processes. Communities in which renewable energy projects are located should receive a fair share of the benefits produced. Following that human rights-based approach is a legal obligation for the State. It decreases the potential for socio-environmental conflict, accelerates the just energy transition and increases the likelihood of positive outcomes.

28. The enhanced nationally determined contribution of Chile, published in 2020, represents a significant improvement in relation to the original contribution (2015). Chile aims to decrease carbon emissions after 2025 and limit total annual emissions to 95 million tonnes of carbon dioxide equivalent by 2030 (27.5 per cent lower than the previous nationally determined contribution). Other commendable targets include: achieving 70 per cent renewable electricity generation by 2030; slashing black carbon emissions²³ by at least 25 per cent by 2030; restoring 1 million hectares of natural ecosystems through the National Plan for Restoration of Landscapes 2021–2030; and requiring 100 per cent of all new vehicle sales to be electric by 2035. The new nationally determined contribution integrates the Sustainable Development Goals and requires that every climate action contribute to a just transition, emphasizing water security, gender equality and poverty eradication. In 2023, Chile pledged to reverse the growing trend of methane emissions.

29. Other priority climate actions include investments in energy efficiency (e.g. heat pumps for heating and cooling and better insulation for buildings); increased investment in public transport and active transport instead of roads; and increasing support for climate-smart, regenerative, local and organic agriculture. A human rights-based approach to climate action will ensure that policies and programmes focus on those who are most vulnerable or marginalized, such as people facing poverty who live in buildings that are not energy efficient.

30. Populations in situations of vulnerability experience a disproportionate share of climate impacts, but also offer tremendous potential for contributing to just and sustainable solutions. For example, marginalization and discrimination have exacerbated the impacts of climate change on the culture and livelihoods of the Mapuche Indigenous People.²⁴ However, according to the Intergovernmental Panel on Climate Change: “The traditional agriculture of Mapuche Indigenous Peoples includes a series of practices that result in a system that is more resilient to climate and non-climate stressors. Practices include water management, native seed conservation and exchange with other producers (*trafkintu*), crop rotation, polyculture and tree-crop association.”²⁵

31. Empowering women not only respects their human rights and reduces gender inequality but produces environmental benefits. In Chile, women are more likely to modernize irrigation, and gender appears to be an important element in drought adaptation.²⁶

²² See www.irena.org/-/media/Files/IRENA/Agency/Publication/2022/Jul/IRENA_Power_Generation_Costs_2021_Summary.pdf.

²³ Black carbon is a short-lived but powerful climate pollutant that also harms human health.

²⁴ Elvis Parraguez-Vergara, Jonathan R. Barton and Gabriela Raposo-Quintana, “Impacts of climate change in the Andean foothills of Chile: economic and cultural vulnerability of Indigenous Mapuche livelihoods”, *Journal of Developing Societies*, vol. 32, No. 4 (December 2016).

²⁵ Intergovernmental Panel on Climate Change, *Climate Change 2022*, p. 1770.

²⁶ *Ibid.*, pp. 1750 and 1751.

The adoption of agroecological practices has improved gender equality and adaptive capacity in relation to climate change.²⁷

B. Clean air

32. Clean air is one of the basic elements of the right to live in a clean, healthy and sustainable environment.²⁸ Air pollution, especially fine particulate matter, causes respiratory illness, cardiovascular disease, stroke and lung cancer, as well as other adverse health effects.²⁹

33. Poor air quality occurs throughout much of Chile but the main causes vary. In the north, coal-fired power plants and mining operations produce fine particulate matter, sulphur dioxide and heavy metals. In Santiago, transport and industry are the main contributors. In the south, burning wood for heating and cooking is the main problem, compounded in recent years by major forest fires.³⁰ According to the state of global air quality website, there were 6,240 premature deaths in Chile caused by air pollution in 2019 (primarily caused by fine particulate matter).³¹ Studies confirm that children and older persons are particularly vulnerable to poor air quality in Chile.³²

34. The unique topography of Chile, with many cities nestled in valleys between the Andes and the Chilean Coastal Range, traps air pollution and increases health risks. Santiago is the most polluted national capital in Latin America.³³ While air quality is bad in Santiago, it is worse in Temuco, Valdivia and Coyhaique. The 2022 World Air Quality Report identifies 8 Chilean cities among the 15 worst in the Latin American and Caribbean region.

35. On the other hand, for some areas and for some pollutants, air quality in Chile has improved. For example, average annual concentrations of fine particulate matter have declined from 29.6 $\mu\text{g}/\text{m}^3$ in 1990 to 24.2 $\mu\text{g}/\text{m}^3$ in 2020.³⁴ However, WHO recently reduced its annual guideline for fine particulate matter from 10 $\mu\text{g}/\text{m}^3$ to 5 $\mu\text{g}/\text{m}^3$, meaning average levels for this pollutant in Chile are nearly five times higher than the recommended limit.

36. The Government has developed air pollution prevention plans for regions in which concentrations of air pollutants exceed 80 per cent of national limits (designated as latent zones) and atmospheric decontamination plans for regions that already exceed national limits (designated as saturated zones). Urban plans promote public transport, bicycles, electric vehicles, emissions regulations, restrictions on vehicle use and the creation of green areas. In 2018, Santiago was the first city in Latin America to require Euro 6 emissions standards for public transportation, opening the door to a recent purchase of more than 100 electric buses.

37. Electrification of energy end use is the optimal pathway to cleaner air in Chile; it will also contribute to addressing the climate crisis as fossil fuels are replaced by renewables in the electricity system. Improved energy efficiency standards for new buildings, and support for improving the energy efficiency of existing buildings, are particularly important in the south, where low-income households should be prioritized. Home-heating systems based on combustion (wood, pellets etc.) should be replaced with electric heat pumps, again with subsidies prioritizing low-income households.³⁵ Reducing emissions from road traffic is also

²⁷ Ibid., p. 1751.

²⁸ A/HRC/40/55.

²⁹ See [www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](http://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health).

³⁰ Cristian Mardones and Natalia Cornejo, "Ex-post evaluation of environmental decontamination plans on air quality in Chilean cities", *Journal of Environmental Management*, vol. 256 (February 2020).

³¹ See www.stateofglobalair.org/data/#/health/plot.

³² Nelson Gouveia and others, "Effects of air pollution on infant and children respiratory mortality in four large Latin-American cities", *Environmental Pollution*, vol. 232 (January 2018); and Sabit Cakmak, Robert E. Dales and Claudia Blanco Vidal, "Air pollution and mortality in Chile: susceptibility among the elderly", *Environmental Health Perspectives*, vol. 115, No. 4 (April 2007).

³³ See www.iqair.com/gb/world-most-polluted-cities.

³⁴ See https://stats.oecd.org/viewhtml.aspx?datasetcode=EXP_PM2_5&lang=en.

³⁵ Mónica M. Jaime, Carlos Chávez and Walter Gómez, "Fuel choices and fuelwood use for residential heating and cooking in urban areas of central-southern Chile: the role of prices, income, and the availability of energy sources and technology", *Resource and Energy Economics*, vol. 60 (May 2020).

important. The transport system should also be electrified, beginning with a focus on investments in public transit and subsidies for electric bicycles and scooters. Strengthening the regulations on the sulphur content of petrol and diesel fuel would be useful, as the current standard of Chile is 50 per cent weaker than, for example, Canadian, European and American standards.³⁶

38. It is encouraging that 8 of the 28 coal-fired power plants in Chile have already been closed down. Burning coal is an outdated and uneconomic means of generating electricity, causing high levels of local air pollution, producing mercury contamination, exacerbating the climate crisis and violating the right to live in a clean, healthy and sustainable environment. High-income States, such as Chile, should close all coal-fired power plants by 2030 at the latest. Enel deserves credit for closing all three of its coal-fired power plants and replacing them with solar, wind and geothermal electricity.

C. Safe and sufficient water

39. “It seems that drinking water is a privilege, only for some. They don’t know what it’s like to go 12 hours without drinking water”, as noted by a young person from Petorca. Although most people in Chile enjoy access to clean water and sanitation, tens of thousands of households in rural communities and informal settlements on the outskirts of large cities lack access to safe and sufficient drinking water that meets international human rights standards.³⁷ Those standards include availability (sufficient quantity and reliable, consistent supply), quality, affordability, accessibility (including in schools) and acceptability (e.g. taste, colour and odour).³⁸ For example, in Petorca, El Melón, Chiloé and elsewhere, many persons are forced to rely on water delivered by tanker trucks.³⁹ In the region of Antofagasta, approximately 40 per cent of the rural population does not have access to reliable, consistent, safe and sufficient drinking water.⁴⁰ One person from Petorca mentioned paying the exorbitant price of 8,000 Chilean pesos for 1,000 litres. The Special Rapporteur heard harrowing testimony from a teenage girl about the impacts of living without water at home or school on her mental and physical health, including menstrual hygiene. Yet, there are vast plantations of avocados and citrus fruit in her region, obviously using massive quantities of water.

40. The problem is that water rights in Chile were privatized decades ago. The Water Code allowed the State to grant water rights in perpetuity, free of charge, and the 1980 Constitution protects these rights as a form of property. That system has led to increasing control of water supplies by industrial agriculture, forestry and mining companies at the expense of people in rural communities, Indigenous People and small-scale farmers. A multi-year megadrought and the escalating impacts of the global climate crisis have exacerbated water scarcity. By the end of 2021, more than half of the population of Chile lived in areas confronted by severe water scarcity.⁴¹

41. For example, the flow of the Loa River in northern Chile has dropped 75 per cent in recent decades due to water-intensive mining activities and growing urban demand.⁴² That

³⁶ The Chilean standard is 15 parts per million for sulphur content in fuel (Ministry of Energy, Supreme Decree No. 60 of 17 March 2012), whereas in other OECD nations it is 10 parts per million.

³⁷ Fundación Amulén, *Pobres de Agua: Radiografía del Agua Rural de Chile – Visualización de un Problema Oculto* (2020) (in Spanish).

³⁸ See www.ohchr.org/sites/default/files/Documents/Issues/Water/10anniversary/EnglishQns.pdf.

³⁹ Ariel A. Muñoz and others, “Water crisis in Petorca Basin, Chile: the combined effects of a mega-drought and water management”, *Water*, vol. 12, No. 3 (March 2020).

⁴⁰ Barbara Ruffino and others, “Drinking water supply in the region of Antofagasta (Chile): a challenge between past, present and future”, *International Journal of Environmental Research and Public Health*, vol. 19 (3 November 2022).

⁴¹ See www.theguardian.com/world/2022/jun/01/chiles-water-crisis-megadrought-reaching-breaking-point. See also <https://doble-espacio.uchile.cl/2019/07/24/asi-sobreviven-los-hijos-del-rio> (in Spanish).

⁴² Christian Herrera and others, “Recharge and residence times of groundwater in hyper arid areas: the confined aquifer of Calama, Loa River Basin, Atacama Desert, Chile”, *Science of the Total Environment*, vol. 752 (15 January 2021).

dramatic decline affects Indigenous communities in the region, including their rights to water, food and livelihoods, as well as cultural rights. The decreased flow has also had significant negative effects on wetlands, flora and fauna in the region. Rivers and streams in Petorca have dried up, as has Aculeo Lagoon south of Santiago.⁴³

42. The Government has a legal obligation to ensure that everyone has access to safe and sufficient water where they live, work, study and play. Human rights law is clear – the allocation of water must prioritize human rights first, the needs of ecosystems second (because healthy ecosystems are essential for the full enjoyment of multiple human rights) and the needs of industry third. Recent changes to the Water Code and the Agua Potable Rural programme are intended to prioritize human consumption, but there is still a substantial implementation gap.⁴⁴

43. There are many options, ranging from requiring large-scale agribusinesses to use efficient irrigation technologies, requiring mining companies to repeatedly recycle water and building desalination plants for communities, not companies. The Government has constitutional and legal powers (including expropriation) to reallocate water resources in order to fulfil its human rights obligations. The Government must also prevent third parties, including businesses, from impairing the enjoyment of the right to water.

44. To make matters worse, climate science indicates that levels of precipitation across Chile will continue to decline in the coming years, while the population is projected to grow, exacerbating existing levels of water scarcity. The Intergovernmental Panel on Climate Change warned that the situation of water in Chile faces very high vulnerability mainly due to weak water governance focused on market aspects.⁴⁵ In particular, according to the Intergovernmental Panel on Climate Change, the relative lack of power of poor communities living in areas in which the mining industry uses large volumes of water renders these communities even more vulnerable.

D. Non-toxic environments

45. A fisher from Quintero stated that: “Those who have some money go to live in other places. But what choice do I have?” As the Special Rapporteur reported to the Human Rights Council last year, a “sacrifice zone” is a place in which residents suffer devastating physical and mental health consequences and human rights violations as a result of living in pollution hotspots and environmentally degraded areas.⁴⁶ In sacrifice zones around the world, profits and private interests are prioritized over people, health, human rights and the environment. Sacrifice zones are the diametric opposite of sustainable development, harming both present and future generations. The people who inhabit sacrifice zones are exploited, traumatized and stigmatized. They are treated as disposable, their voices ignored, their presence excluded from decision-making and their dignity and rights trampled upon.⁴⁷

46. In Chile, the most well-known sacrifice zones, created decades ago, are in five communities in which 20 coal-fired power plants continue to operate: Mejillones (7 power plants), Huasco (5), Tocopilla (4), Quintero-Puchuncaví (3) and Coronel (1). Other communities identified as potential sacrifice zones include Arica, Concón, Chañaral,⁴⁸ Tiltil,⁴⁹ the area of intensive mining near Calama, and Hualpén-Talcahuano Bay.⁵⁰

⁴³ John Bartlett, “‘Consequences will be dire’: Chile’s water crisis is reaching breaking point”, *The Guardian*, 1 June 2022.

⁴⁴ Ruffino and others, “Drinking water supply in the region of Antofagasta (Chile)”.

⁴⁵ Intergovernmental Panel on Climate Change, *Climate Change 2022*, p. 1714.

⁴⁶ [A/HRC/49/53](#).

⁴⁷ *Ibid.*

⁴⁸ Sandra Cortés and others, “Urinary metal levels in a Chilean community 31 years after the dumping of mine tailings”, *Journal of Health & Pollution*, vol. 6, No. 10 (June 2016).

⁴⁹ Martin Paegelow and others, “Water vulnerabilities mapping: a multi-criteria and multi-scale assessment in central Chile”, *Water Policy*, vol. 24, No. 1 (1 January 2022), pp. 159–178.

⁵⁰ Katia Valenzuela-Fuentes, Esteban Alarcón-Barrueto and Robinson Torres-Salinas, “From resistance to creation: socio-environmental activism in Chile’s ‘sacrifice zones’”, *Sustainability*, vol. 13, No. 6.

47. Quintero-Puchuncaví, the most notorious sacrifice zone in Chile, is home to the Ventanas industrial complex, comprising more than 15 industrial facilities (oil refineries, petrochemical facilities, coal-fired power plants, gas terminals etc.). Despite that concentration of industry, those communities are among the poorest in the Valparaíso Region. People in Quintero-Puchuncaví suffer from multiple environment-related health problems, including respiratory illnesses, cardiovascular disease, elevated levels of infant mortality, unacceptable levels of cancer risk for children, diseases affecting sexual and reproductive health, and shortened life expectancy.⁵¹ The consequences of living in a sacrifice zone can also be devastating for the mental health of its residents.

48. Despite environmental regulations and other measures introduced over recent decades, those communities continue to be exposed to staggering volumes of current and historic contamination.⁵² Beginning in 2011, repeated air pollution incidents in Quintero-Puchuncaví made hundreds of schoolchildren ill. Mass poisoning continues to occur, including in March 2023, when four pollution episodes affected hundreds of students and adults.⁵³

49. Soil in the Quintero-Puchuncaví region contains levels of toxic substances, including lead and copper, that exceed international standards. New scientific research establishes a clear link between arsenic concentrations in the soil and the risk of cancer in Quintero-Puchuncaví, leading the authors to “strongly recommend the implementation of an environmental remediation program focused on reducing as much as possible the human exposure to soils with high levels of heavy metals”.⁵⁴

50. The artisanal fishing industry in Quintero-Puchuncaví, formerly a key source of food and livelihoods, has been decimated by pollution (oil spills, coal spills and chemical leaks). For example, high levels of arsenic have been reported in eight important marine species, including a species of crab that had arsenic levels nearly 30 times higher than are safe for human consumption.⁵⁵

51. In 2019, the Supreme Court of Chile concluded that the egregious pollution in Quintero-Puchuncaví violated the right to a pollution-free environment and ordered the Government to take 15 specific steps to address the problem.⁵⁶ The Supreme Court held that economic development, even when it legitimately aimed to improve the quality of life of people, could not be implemented by ignoring or abandoning the conservation and protection of the environment and could not compromise the interests of future generations.⁵⁷ Today, there is a Quintero-Puchuncaví environmental and social recovery programme in place.

52. Unfortunately, there have been extensive delays and problems in the implementation of the Supreme Court’s decision, resulting in limited progress towards the overall goal of solving the contamination problem and improving the quality of life of the communities. The Office of the Comptroller-General identified serious omissions and gaps in the monitoring of pollutants in Quintero, Puchuncaví and Concón.⁵⁸ According to the Office of the Comptroller-General, “there is still no consolidated analysis of the pollutants present in

⁵¹ Maite Berasaluce and others, “Soil and indoor dust as environmental media of human exposure to As, Cd, Cu, and Pb near a copper smelter in central Chile”, *Journal of Trace Elements in Medicine and Biology*, vol. 54 (July 2019); and Tapia-Gatica and others, “Advanced determination of the spatial gradient of human health risk and ecological risk”.

⁵² Eugenia M. Gayo and others, “A cross-cutting approach for relating Anthropocene, environmental injustice and sacrifice zones”, *Earth’s Future*, vol. 10, No. 4 (April 2022).

⁵³ See www.biobiochile.cl/noticias/nacional/region-de-valparaiso/2023/03/31/casi-100-intoxicados-en-las-ultimas-24-horas-por-contaminacion-en-quintero-no-sabemos-que-puede-ser.shtml (in Spanish).

⁵⁴ Eva Madrid and others, “Arsenic concentration in topsoil of central Chile is associated with aberrant methylation of p53 gene in human blood cells: a cross-sectional study”, *Environmental Science and Pollution Research*, vol. 29, No. 32 (July 2022).

⁵⁵ See www.biobiochile.cl/noticias/2016/05/22/ong-8-peces-y-mariscos-de-quintero-tienen-23-veces-mas-arsenico-que-norma-admitida.shtml (in Spanish).

⁵⁶ Supreme Court, *Francisco Chahuán Chahuán v. Empresa Nacional de Petróleos, ENAP S.A.*, Case No. 5888-2019, Judgment, 28 May 2019.

⁵⁷ *Ibid.*, para. 34.

⁵⁸ Office of the Comptroller-General, *Final Report No. 27 of 2022*, available at www.contraloria.cl/pdfbuscador/auditoria/cf7191025c207057e17fc32e99abe136/html (in Spanish).

water, air and soil in the area, nor a methodology to measure how they have affected people's health ... there was no follow-up to the La Greda schoolchildren who suffered intoxication in 2011 and ... no standards have been created to measure soil quality, nor to set limits on the emission of volatile organic compounds."⁵⁹ As a result, there are still large gaps in understanding the mass poisoning events that continue to occur. The lack of monitoring of lead levels in children's blood is a serious concern, given the high levels of lead in soil and dust. In fact, there are many toxic chemicals that Chile neither monitors nor subjects to environmental standards. However, on the penultimate day of the Special Rapporteur's visit, a strong new standard was created for benzene, a volatile organic compound that is a known carcinogen.

53. In May 2023, the Supreme Court issued additional judgments ordering the clean-up and remediation of Quintero-Puchuncaví.⁶⁰ The Supreme Court ruled that the atmospheric decontamination and prevention plan for Concón, Quintero and Puchuncaví violated the principles of prevention, the polluter pays and progressiveness. The Government was ordered to upgrade air quality standards based on the WHO guidelines published in 2021 and create standards for volatile organic compounds within three years. Lastly, the Ministry of the Environment must provide a semi-annual progress report to the Second Environmental Court on that specific case.

54. Although decontamination plans contribute to a reduction in air pollution, which, in some cases, meet Chilean standards, air quality in Quintero-Puchuncaví and other sacrifice zones is still substantially worse than that recommended by WHO.⁶¹

55. It is encouraging that the State-owned Ventanas copper smelter was closed in 2023, a major step forward that will result in a significant reduction in pollution in Quintero-Puchuncaví. That facility produced a vast amount of contamination over its more than 50-year history, poisoning local residents who suffered disproportionate adverse impacts on their lives, health and livelihoods, while the lion's share of the economic benefits went elsewhere.

56. It is unacceptable for Chile to exacerbate ongoing human rights violations in Quintero-Puchuncaví by approving additional sources of pollution and toxic substances, such as the Aguas Pacíficas desalination plant under construction in Quintero. No new industrial facilities should be built in Quintero-Puchuncaví – or any other sacrifice zone or saturated area – until existing levels of pollution have been reduced to meet WHO standards.

57. With respect to existing sacrifice zones, Chile should apply a human rights-based approach to laws, regulations, policies and actions governing the production, import, sale, use, release and disposal of substances that may harm human health or the environment, in order to eliminate the negative impacts on human rights. A rights-based approach should also govern clean-up, remediation, restoration and compensation. A rights-based approach clarifies the obligations of Governments and the responsibilities of businesses, prioritizes the most disadvantaged and catalyses ambitious action. Immediate action must be taken to eliminate residents' exposure to environmental hazards. Putting economic considerations ahead of human rights is a fundamentally flawed form of decision-making, as the Inter-American Commission on Human Rights recently clarified.⁶²

58. Large businesses that contribute to the burden of pollution and toxic exposure in sacrifice zones do not meet their human rights responsibilities.⁶³ Businesses that operate in sacrifice zones should install pollution-abatement equipment that meets best available technology standards, switch to clean fuels, change processes, reduce production and, if necessary, relocate. Businesses are also responsible for cleaning up and rehabilitating

⁵⁹ See www.ciperchile.cl/2022/06/22/contraloria-identifica-graves-omisiones-y-vacios-en-el-monitoreo-de-contaminantes-en-quintero-puchuncavi-y-concon (in Spanish).

⁶⁰ Supreme Court, Case Nos. 149.171-2020 and 118802-2023 cited above.

⁶¹ See https://media-front.elmostrador.cl/2022/03/sintesis_informe_emisiones_2-1-1.pdf (in Spanish).

⁶² Inter-American Commission on Human Rights, *Community of La Oroya, Peru*, Report No. 330-20, Case No. 12.718, 19 November 2020 (in Spanish).

⁶³ Guiding Principles on Business and Human Rights.

communities, land, water and ecosystems polluted or contaminated by their operations and for contributing to compensation.

E. Healthy and sustainably produced food

59. Agriculture is one of the main economic activities in Chile, but it is associated with extensive use of pesticides, which present a risk to human health and the environment. The pesticides authorized for use in Chile include 102 highly hazardous pesticides; 46 that are banned in the European Union and countries such as Brazil, China, the Republic of Korea, New Zealand, Norway, Saudi Arabia and Switzerland; and 29 that are considered carcinogenic by the United States Environmental Protection Agency.⁶⁴ Pesticide use causes hundreds of cases of poisoning annually.⁶⁵

60. Evidence suggests a relatively high rate of pesticide use in Chile compared with other countries. For example, pesticide sales in OECD countries averaged 0.93 kg/ha in the period 2011–2015, compared with 2.68 kg/ha in Chile.⁶⁶ The excessive use of pesticides leads to air, water and soil pollution, contributing to adverse impacts on soil quality, human health and food systems.

61. According to information received during the visit, acute poisoning and diseases associated with the use of pesticides were suffered by children, agricultural workers, Indigenous communities and other rural inhabitants. That indicates that there are still high risks associated with the use of pesticides in Chile. Pesticide exposure can damage human health, with children and pregnant women being particularly vulnerable. Moreover, many countries, including Chile, lack fully effective monitoring systems to regulate the pesticide industry and control pesticide use by agribusinesses. This lack of monitoring and barriers to seeking and obtaining redress could amount to human rights violations if not addressed properly.

62. In October 2022, 31 pesticides were banned in a decision by the Minister of Agriculture who announced the prohibition of the sale and use of all pesticides containing the active ingredients chlorpyrifos-ethyl, chlorpyrifos-methyl, paraquat dichloride and methomyl due to their high degree of toxicity.⁶⁷ In parallel, the new Workplan for the Regulation and Inspection of Pesticides in Chile 2022–2025 was launched.⁶⁸ The aim of the workplan is to strengthen traceability in the purchase of agrochemicals and to promote more sustainable agriculture, including new forms of authorization for products approved by the European Union and the United States; prioritizing the authorization of green pesticides; restricting sales to those aged 18 or more; and introducing restrictions on the use of pesticides considered highly dangerous. An additional regulation enacted in October 2023 bans 14 additional hazardous pesticides. The process of adapting the current regulations on pesticides will be compliant with the provisions of the recently approved law on beekeeping.

F. Healthy biodiversity and ecosystems

63. Several major industries in Chile, including industrial fishing, salmon aquaculture, forestry and mining, threaten biodiversity. Chile endorsed the Kunming-Montreal Global Biodiversity Framework in December 2022, committing to take a human rights-based approach to conserving and restoring biodiversity, as well as to protect at least 30 per cent of all terrestrial, freshwater and marine ecosystems by 2030. Indigenous Peoples have a key role

⁶⁴ Carolina Concha and Carlos A. Manzano, “Priority pesticides in Chile: predicting their environmental distribution, bioaccumulation, and transport potential”, *Integrated Environmental Assessment and Management*, vol. 19, No. 3 (May 2023).

⁶⁵ Jessica Coria and Sebastian Elgueta, “Towards safer use of pesticides in Chile”, *Environmental Science and Pollution Research*, vol. 29, No. 16 (April 2022).

⁶⁶ *Ibid.*

⁶⁷ See <https://minagri.gob.cl/noticia/ministerio-de-agricultura-anuncia-prohibicion-de-uso-de-cuatro-plaguicidas-y-presenta-nuevo-plan-de-trabajo-para-mejorar-la-regulacion-de-agroquimicos-en-chile> (in Spanish).

⁶⁸ *Ibid.*

to play in conserving biodiversity in Chile. Wetlands in all regions urgently require greater protection from industry and urban development.

64. At present 21 per cent of the country's land is in national parks or other protected areas, while an impressive 42 per cent of its marine territory is protected. However, the majority of protected areas lack management plans, and resources for conservation action are limited. In a positive step, the newly created Biodiversity and Protected Areas Service established a national protected areas system, integrating all the existing protected areas in Chile, marine and terrestrial, that are currently managed by several different ministries.

1. Salmon farming

65. The salmon industry has increased its production and marine footprint dramatically during recent decades in Chile. According to data from the Undersecretary of Fisheries and Aquaculture and the National Fisheries and Aquaculture Service, Chile has become the world's second largest producer of salmon, with more than 1,200 aquaculture concessions granted in the Los Lagos, Aysén and Magallanes Regions. Over the last 30 years, the Chilean salmon industry has grown by an average rate of 117 per cent a year, inflicting ecological damage on ecosystems often located in Indigenous territories.⁶⁹

66. Salmon farming is one of the main environmental threats facing Patagonia, especially the Kawésqar National Park, which is important for the conservation of diverse species and ecosystems, including 32 species of cetaceans.⁷⁰ The salmon industry has contributed to an increase in industrial waste on beaches, in the water and on the seabed. The Special Rapporteur visited Reloncaví Sound and observed sites for salmon farming. He was also informed of the recent installation of a new salmon farming site in Hualaihué, jeopardizing a nearby wetland.

2. Forest industry

67. The Chilean forestry industry produces 2.24 per cent of the world's timber exports.⁷¹ In southern Chile, in the traditional territories of the Indigenous Mapuche, biodiversity and native forests have been replaced by monoculture plantations. The approach and practice of forest "extractivism" are having profoundly negative consequences, such as soil degradation, dryness and an increase in forest fires, threatening the rights, lifestyles and livelihoods of the Indigenous Mapuche.

IV. Indigenous Peoples

68. According to the 2017 census, almost 2,200,000 persons or approximately 11 per cent of the total population of Chile declared that they had Indigenous origins.⁷² Many Chileans are of partially Indigenous descent; however, Indigenous identity and its legal ramifications are typically reserved for those who self-identify with and are accepted within one or more Indigenous groups. The largest populations are Mapuche, who account for 80 per cent of the Indigenous population as a whole and with whom the Special Rapporteur met in Puerto Montt. There are also other groups like the Atacameños, with whom the Special Rapporteur met during his visit to Calama.

69. In 2015, the Special Rapporteur on extreme poverty and human rights stated that: "The rights of indigenous peoples are the Achilles' heel of the human rights record of Chile in the twenty-first century."⁷³ That was repeated by the Special Rapporteur on adequate housing as a component of the right to an adequate standard of living, and on the right to non-discrimination in this context, in 2018 and, unfortunately, that still seems to be the case.⁷⁴

⁶⁹ See www.greenpeace.org/chile/noticia/greenpeace/cidh-recibe-a-comunidades-de-tres-pueblos-origenarios-y-greenpeace-por-expansion-de-salmonicultura (in Spanish).

⁷⁰ See <https://bibliotecadigital.indh.cl/handle/123456789/1739> (in Spanish).

⁷¹ Information received as part of the official call for inputs for the visit.

⁷² See www.censo2017.cl.

⁷³ A/HRC/32/31/Add.1, para. 52.

⁷⁴ A/HRC/37/53/Add.1, para. 69.

70. The Committee on Economic, Social and Cultural Rights has recommended that Chile implement the necessary measures to ensure free, prior and informed consent of Indigenous Peoples in relation to their rights under the Covenant and increase its efforts to guarantee the right of Indigenous Peoples to dispose freely of their lands, territories and natural resources, by such means as providing legal recognition of their landownership.⁷⁵ The Special Rapporteur was disturbed to learn that the Government of Chile had approved the Rucalhue hydroelectric project on the upper Biobío River, violating an agreement with Mapuche Indigenous Peoples concluded in 2004 promising no further megaprojects, especially hydro projects, in that region.⁷⁶

71. During a visit to the Atacama Region in northern Chile, where there are large copper, lithium and renewable energy projects, the Special Rapporteur observed serious shortcomings in compliance with the State's obligations to fully inform Indigenous People about proposed developments, to ensure their participation in decision-making and to secure their free, prior and informed consent on an ongoing basis. The lack of a comprehensive system of dialogue from the earliest stages of planning to ensure ample and equitable participation is not consistent with the human rights obligations of Chile.

72. One example of the lack of consultation, which was provided to the Special Rapporteur, involved the installation of a municipal waste landfill site in the municipality of Ancud on the island of Chiloé.⁷⁷ In 2019, the municipality failed to adequately consult both Indigenous People and other affected communities. The same mistake was apparently repeated in 2020 with regard to a second site close to a natural sanctuary on the River Chepu, where a landfill site was created. Indigenous persons who protested against the project were violently removed by members of the National Police.⁷⁸

V. Environmental human rights defenders

73. The Declaration on the Right and Responsibility of Individuals, Groups and Organs of Society to Promote and Protect Universally Recognized Human Rights and Fundamental Freedoms defines a defender as any person who acts to promote and protect human rights in a peaceful manner. The work of environmental human rights defenders is key in realizing the full enjoyment of the right to a clean, healthy and sustainable environment for all persons.

74. Unfortunately, defending human rights in Chile is a risky activity, especially for those who defend land, water, territory and the environment. Indigenous defenders of nature and environmental human rights defenders have been targeted using harassment, threats, cybersurveillance, criminalization, lawsuits and violence (including sexual violence against women). The Government must forcefully state that those actions are unacceptable. A civil society organization has urged Chile to make visible the struggle and attacks that women defenders have suffered.⁷⁹

75. Since September 2022, Chile has been a party to the Escazú Agreement, which is the only instrument in the Chilean legal system (and the first regional treaty in the world) that expressly mandates the protection of human rights and environmental defenders. Article 9 (1) of the Escazú Agreement states that each party should guarantee a safe and enabling environment for persons, groups and organizations that promote and defend human rights in environmental matters, so that they are able to act free from threat, restriction and insecurity.

⁷⁵ E/C.12/CHL/CO/4.

⁷⁶ Inter-American Commission on Human Rights, *Mercedes Julia Huenteano Beroiza and others v. Chile*, Case No. 4617/02, Report No. 30/04, 11 March 2004.

⁷⁷ Peter E. Schmid, Jenny M. Schmid-Araya and Andrés Lagarrigue I., "El medioambiente a contrarreloj frente a la basura en Chiloé: la persistencia de la inercia burocrática", *OecoPolítico*, 7 February 2022 (in Spanish).

⁷⁸ "Video: dura represión contra comunidades indígenas que se oponen a vertedero en Chiloé", *El Desconcierto*, 2 September 2019 (in Spanish).

⁷⁹ In 2021, Amnesty International launched a global campaign about harassment and attacks on women water defenders in Chile.

76. The implementation of commitments made under the Escazú Agreement should be as open and participatory as possible. A recent report by a civil organization identified key gaps between the requirements of the Escazú Agreement and current Chilean laws and policies, noting: a lack of specific policies to facilitate access to justice for individuals and groups in positions of vulnerability; broad justifications for denying access to information in Chile that go beyond what is permitted by the Escazú Agreement; and a lack of specific protection measures for environmental human rights defenders.⁸⁰

77. A vital protocol on the protection of environmental human rights defenders is being developed by the Ministry of Justice and Human Rights. It is also essential to guarantee timely and effective investigations into crimes committed against human rights defenders in order to overcome a history of impunity. In that regard, the Office of the Public Prosecutor must carry out investigations with urgency and due diligence. In addition, preventive policies should be put in place for the creation of a safe and enabling environment for defenders to do their work. To be clear, women and men environmental human rights defenders are heroes for people and the planet and should be recognized as such by the State.

VI. Conclusions and recommendations

78. **“We don’t want more speeches; we need concrete improvements”, as stated by an individual from a civil society organization. Seven years ago, OECD wrote that “Chile has one of the most resource-intensive economies of OECD countries and is over-reliant on natural resources like copper, agriculture, forestry and fisheries for delivering economic growth. It suffers from persistently high air pollution in urban and industrial areas, water shortages and pollution, habitat loss and vulnerability to climate change. More than 95 per cent of its waste continues to be landfilled ... the country’s natural resource-based economic model is starting to show its limits.”⁸¹**

79. **Despite some progress achieved by the Government, the overall environmental challenges remain. However, the Government has an ambitious goal of achieving a just social and ecological transition, moving away from the “extractivist” approach that exploits both people and nature. That is a commendable objective and vitally important in a country facing daunting environmental challenges and systemic inequality. It will only succeed if human rights are placed at the heart of every law, policy and programme intended to accelerate progress in relation to the climate and the environment. That is a legal obligation, not an option.**

80. **Implementing the recommendations set out below would assist Chile in achieving its environmental objectives, fulfilling its human rights commitments, alleviating inequality and accelerating progress towards the Sustainable Development Goals.**

81. **The Special Rapporteur encourages the Government of Chile:**

(a) **To strengthen the provisions on the environment, nature, water and human rights in the Constitution;**

(b) **To urgently detoxify sacrifice zones and eliminate environmental injustices by:**

(i) **Reducing pollution to levels that meet international standards, closing the worst polluting facilities, remediating contaminated sites and, where necessary, relocating affected communities (with their informed consent and adequate compensation);**

(ii) **Preventing the creation of new sacrifice zones and prohibiting new sources of pollution in areas in which a disadvantaged population already endures a**

⁸⁰ Fiscalía del Medio Ambiente, *Análisis del Cumplimiento de Estándares del Acuerdo de Escazú en Chile*, 2nd ed. (2023) (in Spanish).

⁸¹ See www.bnamericas.com/en/news/chile-must-implement-measures-to-stem-environmental-pressures---oecd.

disproportionate burden of pollution, in part by amending environmental impact assessment legislation to require consideration of environmental justice issues;

(iii) Producing a regularly updated national report on environmental injustices (including sacrifice zones), ideally by the National Human Rights Institute;

(iv) Strengthening laws and policies to establish liability for the clean-up and restoration of contaminated sites (based on the polluter pays principle), including retroactive liability for all responsible parties;

(v) Ensuring that all development initiatives, such as the recently announced National Lithium Strategy and other large-scale industrial projects, take place in a way that respects human rights by recognizing the rights of Indigenous Peoples to free, prior and informed consent regarding projects in their territories, respecting the rights of local communities to participate in decision-making and share in the benefits, imposing the highest possible environmental standards and maximizing public benefits⁸²

(c) To implement the State's obligations under the Escazú Agreement by:

(i) Establishing monitoring programmes, assessing major sources of exposure to toxic substances and providing the public with accurate, accessible information about health risks;

(ii) Strengthening and implementing worker, community and citizen right-to-know laws and policies, to ensure that relevant and complete information concerning chemical hazards, risks and possible exposure is available and easily accessible, recognizing that human rights, public health and environmental protection must take priority over business confidentiality;

(iii) Ensuring meaningful, informed, inclusive and equitable public participation in decision-making;

(iv) Using the best available scientific evidence to develop laws, regulations, standards and policies;

(v) Enabling affordable and timely access to justice and effective remedies for all;

(vi) Assessing the potential environmental, social, health, cultural and human rights impacts of all plans, policies, projects and proposals that could foreseeably contribute to or exacerbate the climate and environmental crises, including through stronger environmental impact assessment legislation;

(vii) Integrating gender equality into all climate and environmental plans and actions and empowering women to play leadership roles at all levels;

(viii) Providing strong protection for environmental human rights defenders, diligently investigating, prosecuting and punishing the perpetrators of crimes against such defenders and addressing the root causes of socioenvironmental conflict;

(d) To strengthen environmental laws, regulations and standards by:

(i) Prohibiting the import, production, sale and use of substances that are highly toxic, bioaccumulative and persistent (including carcinogens, mutagens, endocrine disruptors, reproductive toxins, immune system toxins and neurotoxins) with limited exemptions where uses are essential for society; and banning all uses of per- and polyfluoroalkyl substances;

⁸² In this regard, the management of the oil and gas industry by Norway offers a useful model. Norway established high environmental standards and policies to maximize public benefits, including a 75 per cent tax on petroleum company profits and local hiring and procurement requirements.

- (ii) **Strengthening national standards, based on WHO guidelines for ambient air quality (updated in 2021), indoor air quality, drinking water quality, soil quality and toxic chemicals;**
- (iii) **Requiring businesses to conduct human rights and environmental due diligence;**
- (iv) **Requiring businesses to post mandatory bonds or insurance of sufficient magnitude to cover future pollution and contamination liabilities;**
- (v) **Strengthening regulatory requirements and institutional capacities for solid, liquid and hazardous waste collection, treatment and management, financed by implementation of the polluter pays principle;**
- (e) **To continue taking an effective, rights-based approach to domestic and international climate action, including by:**
 - (i) **Closing all coal-fired power plants and generating 100 per cent of electricity from renewable sources by 2030;**
 - (ii) **Electrifying end uses of energy, including heating, cooling and transportation;**
 - (iii) **Accelerating measures to reduce the risk of wildfires and to protect vulnerable populations;**
 - (iv) **Increasing investments and incentives for energy efficiency, energy storage, public transport, active transport and climate-smart agriculture;**
 - (v) **Renegotiating trade and investment treaties to eliminate investor-State dispute settlement provisions or withdrawing consent to arbitration pursuant to those treaties;**
- (f) **To improve air quality, including by:**
 - (i) **Following the seven steps set out in the report of the Special Rapporteur on the right to breathe clean air;⁸³**
 - (ii) **Using the most recent guidance from WHO to strengthen air quality standards;**
 - (iii) **Reducing emissions from motor vehicles, in particular in Santiago;**
 - (iv) **Subsidizing the replacement of heating sources using wood, coal or other fuels with electric heat pumps, prioritizing the poorest segments of the population;**
- (g) **To ensure safe, sufficient water and adequate sanitation, including by:**
 - (i) **Applying a rights-based approach to all aspects of water governance, as set forth by the Special Rapporteur;⁸⁴**
 - (ii) **Taking steps to reverse the privatization of water and to reallocate water to fulfil human rights and meet human needs;**
 - (iii) **Prioritizing the replacement of water delivered by tanker trucks with water infrastructure that ensures the full enjoyment of the human right to water;**
 - (iv) **Guaranteeing, in legislation, environmental flows for rivers and wetlands, ensuring that the quantity, timing and quality of freshwater flows are sufficient to sustain healthy aquatic ecosystems and the human livelihoods and well-being that depend on them;**
 - (v) **Protecting water sources from overexploitation and contamination and restoring the health of aquatic ecosystems;**

⁸³ [A/HRC/40/55](#).

⁸⁴ [A/HRC/46/28](#).

- (vi) **Ensuring high efficiency standards for all equipment using water, including irrigation systems, toilets and appliances;**
- (vii) **Requiring building construction and retrofits to incorporate measures such as rainwater harvesting and low-flow fixtures;**
- (viii) **Require users, especially businesses, to pay for water and for wastewater treatment, with safeguards to protect human rights by ensuring that access to water and sanitation is available and affordable for low-income individuals and communities;**
- (ix) **Reducing the discharge of untreated or inadequately treated wastewater by improving wastewater treatment infrastructure, financed by fees paid by polluters;**
- (h) **To advance healthy and sustainably produced food, including by:**
 - (i) **Prohibiting the import, manufacture, sale or use of all highly hazardous pesticides (category I and II) and collecting any remaining inventory for safe disposal;**
 - (ii) **Promoting the transition away from industrial monocultures towards agroecology, organic, regenerative and other ecologically sustainable food systems;**
 - (iii) **Promoting a shift towards crops that require less water to grow;**
 - (iv) **Establishing a moratorium on further expansion of salmon aquaculture pending an independent scientific review of the adverse environmental impacts;**
- (i) **To improve solid waste management by:**
 - (i) **Systematically applying extended producer responsibility in the context of solid waste management so that producers and importers of paper, plastic, packaging, batteries, tyres and other materials become fully responsible for financing and operating an effective recycling programme;⁸⁵**
 - (ii) **Accelerating the separation of food waste and organic materials from rubbish, which would reduce methane emissions, provide a valuable source of compost and biogas and extend the lifespan of existing landfills;**
- (j) **To protect and restore healthy ecosystems and biodiversity, including by:**
 - (i) **Expediting actions to formally designate additional terrestrial protected areas, in line with commitments made under the Kunming-Montreal Global Biodiversity Framework and in consultation with Indigenous Peoples and local communities, to ensure that their rights are respected;**
 - (ii) **Ensuring that there are sufficient resources, strong rules and management plans for effectively and equitably managing human activities in terrestrial and marine protected areas;**
- (k) **To accelerate the transition to a circular economy by:**
 - (i) **Requiring businesses to redesign products so that they can be safely repaired, repurposed, reused, recycled or composted;**
 - (ii) **Redirecting subsidies away from activities and products that produce pollution and release toxic substances, to support non-toxic and sustainable products;**
 - (iii) **Investing in innovation to identify safe substitutes, accelerate the elimination of the most hazardous chemicals, advance green and sustainable chemistry and spur sustainable remediation;**

⁸⁵ See British Columbia, Extended Producer Responsibility Five-Year Action Plan 2021–2026; and British Columbia, Environmental Management Act, Recycling Regulation No. 449/2004.

- (l) **To advance the right of children to a clean, healthy and sustainable environment by:**
- (i) **Creating an action plan for implementing the State obligations set forth in general comment No. 26 (2023) of the Committee on the Rights of the Child on children's rights and the environment, with a special focus on climate change;**
 - (ii) **Consistently appointing child and youth representatives to national advisory bodies and national delegations to international environmental meetings, including conferences of the parties to conventions on the climate, biodiversity, desertification and toxics;**
 - (iii) **Lowering the minimum voting age to 16;**
 - (iv) **Considering establishing a national children's parliament, as Scotland and other nations have done.**
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