AMNESTY INTERNATIONAL

FAILED STATE OF HEALTH

HEALTH EMERGENCY IN INDIGENOUS PEOPLES OF ESPINAR, PERU

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1. EXECUTIVE SUMMARY

> **"When I was a child, my mom took me to a hospital and they did a urine test. Seven days passed. My little brother, he had more heavy metals than all of us, than all of Alto Huancané, and I was second"**
>
> *Gerson López Chambi,* Alto Huancané Community

The COVID-19 pandemic has had a major impact on the already fragmented and underfunded Peruvian health system and exposed the gaps linked to inequality in access to the right to health in the country. The shortcomings of the health system highlighted by the pandemic reveal a **Failed state of health** that has for decades been the subject of an increasing body of complaints from individuals, groups and organizations – among whom, most importantly, are those affected by exposure to metals and toxic substances – calling on the state to comply with its obligations and ensure the right to health.

The Ministry of Health has established that by 2020 more than 10 million people were at risk of exposure to heavy metals and other toxic substances and more than 6 million were at risk of exposure to arsenic and other metalloids.[1] According to the Ministry of Health's National Health Strategy for the Care of People Affected by Contamination with Heavy Metals and other Chemical Substances, the province of Espinar is an affected area and therefore people living there are at risk of exposure to metals and toxic substances.[2]

In addition to this, Amnesty International's research has revealed the concerns of the population – specifically of the Indigenous communities of Huano Huano, Pacopata, Huini Coroccohuayco, Alto Huancané, Huancané Bajo, Tintaya Marquiri, Alto Huarca, Cala Cala, Huarca, Huisa Ccollana and Huisa – about the potential impact that extractive activities could have on the environment and public health, especially on water quality and how it affects human health indicators in areas near mining operations in Espinar.

There is ample scientific evidence on the harmful effects on health associated with exposure to lead, arsenic, cadmium, mercury and manganese[3]. However, scientific evidence regarding the presence of metals and toxic substances in the environment and their impact on the health of people living in Espinar is still incomplete and inadequate because there is no permanent epidemiological or environmental monitoring which would enable changes in the metals and toxic substances in the environment and in the different population groups in Espinar to be evaluated. There is also a lack of clarity on the specific socioeconomic and environmental determinants (water, air, soil and food) that can affect people's health and little data on exposure to metals and toxic substances and their relationship to health risks in the communities that live in the area affected by mining operations in Espinar. The Peruvian state is responsible for producing and disseminating this information and must do so urgently.

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[1] Vice Ministry of Public Health, Informe Especial N° 060-2020-JAMC-DENOT-DGIESP/MINSA, 27 October 2020, available at: https://perurec.com/wp-content/uploads/2020/12/Documento-MINSA-metales-toxicos.pdf (last accessed 5 April 2020).
[2] Ministry of Health, National Health Strategy for the Care of People Affected by Contamination with Heavy Metals and other Chemical Substances. Map of Peru: Main Sources of Contamination by Heavy Metals, available at: https://www.minsa.gob.pe/portalweb/06prevencion/prevencion_2.asp?sub5=3 (last accessed 8 March 2021).
[3] For more information on the effects of these metals and toxic substances on human health see Chapter 5.1.

Over a three-year period, Amnesty International carried out desk and field research, including analysis of metals and toxic substances in a sample of 150 volunteers who took part in the study and of water quality in 292 locations.

Amnesty International found levels of metals and toxic substances (lead, cadmium, arsenic, mercury and manganese) in the study participants that highlight the health risk to which Indigenous communities in Espinar are exposed. Between five and 88 people had levels of each of the metals and toxic substances analysed higher than the reference values used in the study.[4] In two people, tests revealed the presence of a metal and chemical substance significantly above the reference values used in the study and 14 people had levels of more than one metal and chemical that were equal to or higher than the reference values used in the study.[5]

It is very possible that the number of people with worrying levels of metals and toxic substances found in their bodies is indicative of prevalence among the larger population living in similar conditions to the people in homes and communities analysed.

The organization also found that 151 of the 191 water samples to which a total coliform test was applied[6] were positive; 115 of the positive samples were taken from homes and collection points for water for human consumption,[7] indicating that the water is not clean and safe for human consumption.[8]

In addition to being exposed to metals and toxic substances, the Indigenous communities of Espinar lack certain basic conditions that put them at greater risk as regards their right to health. A survey of 134 households, made up of a total of 508 people, revealed a risk profile mainly related to social and economic factors, and verified that these fell short in terms of an adequate standard of living and level of water security, as well as community concerns about the environment.

The results of the study carried out by Amnesty International, the organization Derechos Humanos Sin Fronteras (Human Rights Without Borders) and Dr Fernando Serrano PhD, adjunct professor at the College for Public Health and Social Justice at Saint Louis University (Missouri, United States of America) provide rigorous and reliable scientific evidence that demonstrates the urgent need to design and implement a public health and environmental strategy for Espinar.

A first positive step was the confirmation on 30 December 2020 by the Cusco Superior Court of a first instance judgment by the Espinar Mixed Court of 5 December 2019, regarding a constitutional compliance action filed by the Campesino Community of Huisa, the Association for the Defence of Pacpacco affected by Mining (ADEPAMI), the Qquetara Water Users Committee, and the Association for the Defence of Irrigators of the Ccañipía-Espinar Micro-basin (FREDERMICE), which ordered the Ministry of Health (Ministerio de Salud, MINSA) to:

> "WITHIN A STRICT TIMESCALE OF 90 DAYS, IT MUST: design and implement a **Public Health Strategy for a Health Emergency**; with an Action Plan that contains a) Place or Scope, b) Objective, c) Goals, d) Activities, e) Compliance indicators, f) Responsible parties, g) Timeframe, h) Financing, i) Monitoring and evaluation, j) Summary and j) Recommendations; that provides for the establishment of a programme for medical treatment, as well as environmental and sanitary epidemiological monitoring, including continuous monitoring of water safety standards; and also carry out a programme of assistance and health care for the population of Yauri Espinar, especially children, pregnant women and the elderly, in order to identify people who may have been affected by the

[4] See Annex I: Reference Values.
[5] See Chapter 3.
[6] "Coliforms belong to a group of bacteria that are commonly found in soil, water and plants. Several types of coliforms are harmless, but there are coliforms that can cause disease". Fernando Serrano PhD, MA, Saint Louis University College for Public Health and Social Justice. Mining, Environmental Health and Human Security: Results of the evaluation of the quality of life and water in Abisinia (Colón), Nueva Esperanza (Atlántida) and San Francisco Locomapa (Yoro) and the responsibility of the State of Honduras, 18 August 2020.
[7] The analysis of metals and toxic substances in the water did not yield conclusive results, and therefore the authorities have a responsibility to carry out periodic analyses of the communities' sources of water in order to provide them with conclusive results on exposure to these substances through the water they consume.
[8] Despite the fact that most of the surface waters in the area are category 3 "Irrigation of vegetables and drinking water for animals", the reality is that these waters are used for human consumption because, according to the statements by members of the community, there is no access to clean and safe water in their communities. The National Water Authority (Autoridad Nacional del Agua, ANA) "in accordance with the mandate conferred by Law No. 29338 the Law on Water Resources" is the institution that categorizes water in the country. The Cañipía, Salado and Apurímac Rivers and their tributaries have been defined as Category 3: "Water for irrigation of vegetables and drinking water for animals". Water from some springs or sources destined for human consumption is classified as Category AI: Waters that can be made drinkable with disinfection. A2 water is: "Water that can be made potable with conventional treatment". Water used for animals is Category 3: Irrigation of vegetables and the drinking water for animals. MINAM, Espinar Roundtable Dialogue, Environmental Sub-Group, Informe final integrado de monitoreo sanitario ambiental participativo de la provincial de Espinar, [Final integrated report on participatory environmental health monitoring in the province of Espinar], June 2013, p. 27, available at: http://www.minam.gob.pe/espinar/wp-content/uploads/sites/14/2013/10/Informe_aprobado.pdf (last accessed 8 March 2021).

consequences of heavy metal contamination and provide them with appropriate medical treatment".[9] (Emphasis added)

It should be noted that in the compliance process the judges attested to the exposure to metals and toxic substances of the people living in Espinar and therefore to "the existence of a serious risk"[10] to their health.

This document does not specifically address the possible causes of exposure to metals and toxic substances of those who took part in the study, but rather focuses on the state's obligation to determine without delay what these causes are and to fulfil its duty to respect, protect and fulfil the right to health of the communities that have been exposed. This requires access to health services and treatment for people that are exposed and that that the authorities provide them with safe, clean water; design and implement a public health and environmental strategy for Espinar as a matter of urgency and ensure reparation for the damage done.

Espinar is at a crossroads: either it is an example of responsibility and success in the design and implementation of a Public Health and Environmental Strategy and a comprehensive damage assessment, or it continues to be one more example of Peru's **Failed state of health**.

In this report Amnesty International makes a series of recommendations to the Peruvian authorities, including:

- With the full participation and in consultation with the 13 Indigenous communities in Espinar and their representative organizations, design and implement an Emergency Public Health and Environmental Strategy for Espinar that takes into account the evidence presented and the elements described in this report, including the finding and judgment of Cusco Superior Court. The Strategy should have a differentiated approach as regards gender and Indigenous identity and allocate the appropriate human, physical and financial resources to carry out the activities necessary for implementation.
- Ensure that any action implemented within the framework of the Public Health and Environmental Strategy complies with the state's obligations under international human rights standards.
- Ensure that accessible, affordable and quality health services are available to address any specific health problems faced by people exposed to metals and toxic substances.
- Finalize and make public the results of the causal study on the presence of metals and toxic substances found in Espinar water, commissioned from Peruvian Institute of Nuclear Energy (IPEN). These results should be shared with the Indigenous communities in Espinar in an accessible format.
- Guarantee that the Indigenous communities in Espinar have access to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic use, and adequate sanitation.
- Carry out, with the participation of the communities, a comprehensive damage assessment that identifies those responsible for the damage and, if applicable, design a reparations plan in line with international standards.

[9] "[…] EN EL PLAZO PERENTORIO DE 90 DÍAS, CUMPLA con diseñar e implementar una Estrategia de Salud Pública de EMERGENCIA SANITARIA; con un Plan de Acción que contenga a) Lugar o Ámbito, b) Objetivo, c) Metas, d) Actividades, e) Indicadores de cumplimiento, f) Responsables, g) Plazo, h) Financiamiento, i) Monitoreo y evaluación, j) Resumen y j) Recomendaciones; que permita establecer un programa de atención médica, así como vigilancia epidemiológica ambiental y sanitaria, incluyendo el monitoreo constante de los estándares de salubridad del agua; asimismo ejecuten un programa de asistencia y atención en salubridad a la población de Yauri Espinar, en especial a los niños, niñas, madres gestantes y adultos mayores, a efectos de identificar a las personas que pudieran sido afectadas por las consecuencias de la contaminación por metales pesados y brindarles atención medica pertinente". Cusco Superior Court, File: 00082-2015-0-1009-JM-CI-01, *Demandante: Comunidad Campesina de Huisa y otros Demandado: Dirección Regional de Salud de Cusco y otros Materia: Acción de cumplimiento Procedencia: Juzgado Mixto de Espinar Ponente: Eduardo Sumire López*, Ruling No. 70, 30 December 2020, pp. 30-31.

[10] "la existencia de [un] grave riesgo", Cusco Superior Court, File: 00082-2015-0-1009-JM-CI-01, *Demandante: Comunidad Campesina de Huisa y otros Demandado: Dirección Regional de Salud de Cusco y otros Materia: Acción de cumplimiento Procedencia: Juzgado Mixto de Espinar Ponente: Eduardo Sumire López*, Ruling No. 70, 30 December 2020, p. 21.

2. METHODOLOGY

This report was produced following an express request by members of Espinar's Indigenous communities to Amnesty International during research missions to the area to have rigorous and independent scientific evidence on the exposure of the population to metals and toxic substances and the quality of the water they consume.[11]

From 14 to 25 May 2018, Amnesty International carried out a follow-up mission to its 2017 report, *A toxic state: Violations of the right to health of Indigenous peoples in Cuninico and Espinar, Peru*, during which it was clear that there was ongoing concern in the communities on these issues. The organization met the then presidents and/or members of the communities of Alto Huancané, Bajo Huancané, Tintaya Marquiri, Pacopata, Huini Coroccohuayco, Huano Huano, San Martín, Hanccollahua, Alto Huarca, Huarca, Huisa , Huisa Collana and Cala Cala[12] who reiterated their request and gave their consent for the field work to take place in their communities.

In order to ensure compliance with ethical responsibilities and national and international regulations in relation to human research, on 10 August 2018 Amnesty International, together with its scientific advisor Fernando Serrano, PhD,[13] presented the project entitled "Evaluation of risks of toxic metals in water and in rural populations near mining operations in Peru" to the Institutional Ethics Committee on Research with Human Beings (Comité Institucional de Ética en Investigación en Seres Humanos, CIEI) of the Directorate of Research, Science and Technology of the Cayetano Heredia University of Peru.[14] The CIEI approved the study on 10 December 2018.[15]

The approved research set out two objectives: (1) to carry out a study to gather rigorous and reliable evidence on water quality and exposure to metals and toxic substances (lead, mercury, manganese, arsenic and cadmium) in the target population, in accordance with the relevant national and international standards[16] to ensure the scientific and ethical quality of the methods used; and (2) disseminate the results of the study and its implications among the population directly affected and at the national and international levels to promote dialogue and decisions that help protect the health and quality of life of the communities and the environment where they live.

[11] For the purposes of this report, "metals and toxic substances" includes heavy metals, metalloids and other toxic chemicals.
[12] Approximately 8,000 people belong to these communities. However, obtaining accurate and up-to-date demographic data is complex due to the rural nature of the population made up of hard-to-reach communities, the difficulty of conducting a complete census and registration and the population's migration dynamics.
[13] Fernando Serrano has a PhD in public policy, focusing on environmental policy and public health, and is adjunct professor at the College for Public Health and Social Justice, Saint Louis University, Missouri, United States of America.
[14] The CIEI is internationally registered with the Office for Human Research Protections (OHRP) of the United States Department of Health and Human Services and nationally accredited by the National Health Institute of Peru, valid until 18 October 2021. OHRP registration codes IORG0000671 and IRB00001014 are valid until 14 March 2022. The CIEI also has Federalwide Assurance (Code FWA00000525), valid until 7 February 2023.
[15] Project 18005. The approval of a Project by the CIEI is for a year. On 19 November 2019 CIEI reapproved the Project for another year until 18 November 2020. In May 2021 Amnesty International sent its Final Report of the study to the CIEI.
[16] Health research with human beings is regulated by the National Health Institute (INS) of Peru. The most recent INS regulations are set out in Ministerial Resolution No. 233-2020-MINSA: Consideraciones éticas para la investigación en salud con seres humanos [Ethical considerations for health research with human beings]. This Resolution and the General Health Law of Peru, Law No. 26842, provide that health research with people is governed in accordance with the Helsinki Declaration and other international standards that protect people in medical research and public health studies. These standards are also applied by the Institutional Ethics Committee for Research with Human Beings of the Cayetano Heredia University of Peru, which approved this study.

The selection of metals and toxic substances for laboratory analysis was based on the results of previous studies in Espinar, which indicated that among the metals of greatest health concern are lead, arsenic, cadmium, mercury and manganese.[17]

The project research team was made up of Dr Fernando Serrano; staff specializing in different disciplines from the organization Derechos Humanos sin Fronteras, a not-for-profit organization that promotes and defends human rights in the province of Espinar; and Amnesty International. Members of the research team obtained a certification in human subjects protection' in carrying out scientific studies from the US National Institutes of Health (NIH) in 2018.[18]

To carry out this study, the research team made four visits to Espinar: two in 2019, 1-14 February and 16-31 October, when water and biological samples (blood and urine) were taken and household surveys were conducted. A third visit took place between 14 and 24 September 2020, during which the people tested were given their lab results and interviews were carried out with community presidents and people whose cases were emblematic of the situation faced by the communities in Espinar. A fourth trip in April 2021 documented, in videos and photographs, the way of life of the people who appear in this report. Due to restrictions related to the COVID-19 pandemic, the last two visits were carried out by members of the research team in the area, with the Amnesty International team providing remote supervision.

The research team and experts from the contracted laboratories took water samples from 292 locations, including household water, that were analysed by the NSF laboratory;[19] and blood and urine samples from 150 volunteers[20] from Indigenous communities which were analysed in the laboratory at the CETOX Toxicology Centre.[21] Blood samples were taken because levels of lead in the blood is the best indicator of recent exposure. Urine samples were taken because they better indicate recent exposure to arsenic, cadmium and mercury. With regard to manganese, blood and urine tests indicate recent exposure to this metal. The NSF and CETOX laboratories are accredited by Peru's National Institute of Quality (Instituto Nacional de Calidad, INACAL). The samples were taken from Espinar, Cusco, to the headquarters of the laboratories in the city of Lima, following protocols and chain of custody requirements of the study protocol and the laboratories. The test for the presence/absence of total coliforms was performed in situ using the PathoScreen reagent.[22]

The research team also conducted 134 surveys of study participants with questions about water, health, the environment and mining and descriptive statistical methods were used for data management. In addition, individual interviews were carried out with 11 community members and six people who, in September 2020, were presidents of their communities.

The results of blood and urine tests, household water tests and the information collected through surveys and interviews are confidential and therefore no names, surnames or other elements identifying individuals have been used in the report without the express consent of participants.

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[17] MINSA – CENSOPAS, Riesgos a la salud por exposición a metales pesados en la provincia de Espinar-Cusco – 2010 [Health risks due to exposure to heavy metals in the province of Espinar-Cusco - 2010], available at https://bvs.ins.gob.pe/insprint/CENSOPAS/metales_pesados/INFORME%20Espinar-Metales%20pesadosCONGRESO%202012.pdf (last accessed 8 March 2021); MINAM, Espinar Roundtable Dialogue, Environmental Sub-Group, Informe final integrado de monitoreo sanitario ambiental participativo de la provincial de Espinar [Final integrated report of participatory environmental health monitoring in the province of Espinar], June 2013, available at http://www.minam.gob.pe/espinar/wp-content/uploads/sites/14/2013/10/Informe_aprobado.pdf (last accessed 8 March 2021); Derechos Humanos sin Fronteras, Analysis of the environmental monitoring of surface and groundwater in Espinar ANA, OEFA and CM MPE (2012-2015).

[18] The training of the United States National Institutes of Health for researchers in health with human beings included the standards of the Helsinki Declaration and other international standards that include voluntary and informed consent, risk-benefit analysis and protection of the personal information and the rights of people who participate in health research studies.

[19] For more information about the NSF laboratory, see https://www.nsf.org/

[20] Regarding the population that was the subject of this study, no accurate or up-to-date demographic data were found, due to the rural nature of the population made up of communities that are difficult to reach, the difficulty of carrying out complete censuses, and the dynamics of migration and residence in the communities. To calculate the sample, the information contained in the social and economic baseline of the Antapaccay-Expansión Tintaya project carried out in 2009 was taken as a reference point. This indicated the total population of communities in this area was approximately 5,963. However, for the baseline study, information was only obtained on 4,025 people, including people permanently living in 763 surveyed households. Based on the above and using a mathematical formula, a sample of 134 people was obtained and the maximum number of participants was set at 150. Research Protocol of the study "Evaluación de riesgos de metales tóxicos en el agua y en poblaciones rurales cercanas a operaciones mineras en Perú" ["Risk assessment of toxic metals in water and in rural populations near mining operations in Peru"], November 2018.

[21] For more information about the CETOX laboratory see: https://cetox.com.pe/

[22] The coliform water samples are collected in special bags and PathoScreen reagent for coliform growth is added. Upon contact with the reagent, the water immediately changes colour to yellow. After 48 hours the samples are examined. If the colour remains yellow, the water does not have coliforms and the sample is negative. If the colour changes to brown or black, the water does have coliforms and the sample is positive.

A coding method was designed to identify participants that includes separate lists of participants and codes indicating blood and urine samples, and of surveys and interviews in order to ensure that the information from laboratory results and evaluations of surveys and interviews cannot be linked to any particular individual.[23]

Amnesty International delivered the laboratory results in person and confidentially to study participants in September 2020, observing the biosafety protocols required because of the COVID-19 pandemic.[24] Each package of results included the laboratory results, a document with basic information on metals and toxic substances and an explanatory document of the individualized results per participant.

The results of the biological samples identified 16 people whose cases were designated as emblematic in light of the fact that the laboratory analyses yielded results of concern: 14 people with more than one metal above reference value levels and two with significantly higher levels of one metal. In these cases, some names, surnames, information and photos of participants have been published with the prior written authorization of the participant.

This report presents the results of the scientific study described above, as well as qualitative research that included desk research; individual interviews with affected people and community leaders; and meetings with medical experts, legal advisors and representatives of state institutions.[25]

On 20 April 2021, Amnesty International communicated the results of this research to the President of the Council of Ministers and the Minister of Health so that their comments could be received before the report was published.[26] By the 10-day deadline expired Amnesty International had received no response from the authorities.

Amnesty International thanks Derechos Humanos Sin Fronteras for their ongoing work as a partner in this study and Dr Fernando Serrano, the main co-researcher of the study, for his scientific advice and support throughout the project.

Finally, but most importantly, Amnesty International would like to thank the people of the communities of Alto Huancané, Bajo Huancané, Tintaya Marquiri, Pacopata, Huini Coroccohuayco, Huano Huano, San Martín, Hanccollahua, Alto Huarca, Huarca, Huisa, Huisa Collana and Cala Cala for their trust and participation; as well as their community governments and civil society organizations in the area. We hope that this report contributes to the defence of their rights and to the implementation of the urgent reparative action owed them by the Peruvian state.

[23] The personal information of the people participating in the study has been withheld and is protected by the research team in accordance with the guidelines established in the research protocol approved by the CIEI.
[24] The delivery of results was initially scheduled for March 2020. However, with the declaration of a state of emergency due to the COVID-19 pandemic, it had to be suspended until the epidemiological situation allowed it to go ahead. Of the 150 laboratory results, 143 were delivered, seven were pending due to participants' lack of interest.
[25] In October 2020, Amnesty International held virtual meetings with teams from the Environmental Assessment and Enforcement Agency (Organismo de Evaluación y Fiscalización Ambiental, OEFA), the National Water Authority and the Provincial Municipality of Espinar. A meeting was requested with the director of the Espinar Hospital, but no response was received (request by letter Ref: 2-2021, dated 20 January 2021 and with a stamp of receipt dated 21 January 2021). Likewise, a meeting was requested with the Cusco Regional Health Directorate (DIRESA), but no response was received (request by letter Ref: 1-2021, dated 20 January 2021 and with a stamp of receipt dated 22 January 2021).
[26] Communication, Ref: 0023-2021/AIPE/DIR dated 20 April 2021. The communication gave the aforementioned institutions a period of 10 days for their comments to be received so that they could be included, as appropriate, in this report.

3. BACKGROUND

3.1 FAILED STATE OF HEALTH

As of 20 April 2021, the Ministry of Health (MINSA) had reported 1,726,806 confirmed cases of COVID-19 and 58,861 deaths linked to the disease.[27] As of 17 April 2021, the Canas Canchis Espinar Health Network (Red de Salud Canas Canchis Espinar) reported that there had been a total of 3,609 confirmed cases of COVID-19 in Espinar since the start of the pandemic and 24 deaths linked to the disease between 11 and 17 April 2021.[28]

The COVID-19 pandemic has had a major impact on the already fragmented and underfunded Peruvian health system and exposed the gaps linked to inequality in access to the right to health in the country.[29]

This **Failed state of health** has become evident at various points during the pandemic: in the lack of beds in intensive care units,[30] and in the lack of medicinal oxygen to treat people with COVID-19.[31] This has led to speculation and the unauthorized sale of an essential medicines, belatedly classified by the state as "strategic";[32] in exorbitant fees charged by private clinics to treat patients from the public health system;[33] and even in the early and secret vaccination of, among others, the then President, Martín Vizcarra, and former members of his government, current government officials, their relatives and others from public and private institutions who were invited to be vaccinated, some related to the clinical study of a vaccine.[34]

The shortcomings of the health system during the pandemic underscore decades of calls from individuals, groups and organizations for the state to comply with its responsibility to guarantee the right to health. In this context, people, communities and organizations in areas near industrial and extractive operations exposed to metals and toxic substances have spoken out to demand health care from the state, including forming a National Platform for People Affected by Toxic Metals (Plataforma Nacional de Afectados por Metales Tóxicos)[35] and the Technical Roundtable on Environmental and Human Health (Mesa Técnica de Salud

[27] Ministry of Health, COVID-19 status report, available at: https://www.gob.pe/institucion/minsa/noticias/483636-minsa-casos-confirmados-por-coronavirus-covid-19-ascienden-a-1-726-806-en-el-peru-comunicado-n-499 (last accessed 22 April 2021).

[28] Red de Salud Canas Canchis Espinar, Covid-19 Epidemiological Status Report, available at: https://www.facebook.com/RedSaludCCE/photos/pcb.4507565165927470/4507556745928312 (last accessed 20 April 2021) .

[29] Amnesty International, *Report 2020/21, The state of the world's human rights* (POL 10/3202/2021) pp. 350-351.

[30] Account of ICU bed availability, available at: https://www.minsa.gob.pe/procesos_covid/

[31] See, Ombudsperson's Office, Crisis de oxígeno para pacientes de COVID-19: Alternativas de solución, [Oxygen crisis for COVID-19 patients: Aternative solutions] Serie Informes Especiales N° 017-2020-DP, 6 June 2020, available at: https://www.defensoria.gob.pe/wp-content/uploads/2020/06/Serie-Informes-Especiales-N%C2%BA-017-2020-DP.pdf (last accessed 3 March 2021) and the Ombudsman's Office, Recomendaciones de emergencia ante la escasez de oxígeno durante la segunda ola de la pandemia por COVID-19 en el Perú, [Emergency recommendations regarding oxygen shortage during the second wave of the COVID-19 pandemic in Peru] Informe de Adjuntía N° 02-2021-DP/AAE, 9 February 2021, available at: https://www.defensoria.gob.pe/wp-content/uploads/2021/02/Informe-de-Adjunti%CC%81a-N-02-2021-DP-AAE.pdf (last accessed 3 March 2021).

[32] Emergency Decree ordering extraordinary measures to increase production and access to medicinal oxygen systems for the treatment of coronavirus and strengthen the health response, within the framework of the national state of emergency due to COVID-19, 4 June 2020, available at: https://cdn.www.gob.pe/uploads/document/file/862158/DU066_2020.pdf

[33] https://www.gob.pe/qu/institucion/sis/noticias/215629-en-dos-procesos-el-sis-firmo-contrato-con-26-clinicas-privadas-de-lima-y-provincias-para-la-atencion-de-pacientes-covid-19-que-requieren-ventilador-mecanico (last accessed 3 March 2021).

[34] Informe de la Comisión Sectorial Investigadora de la aplicación de la vacuna candidata contra la COVID [Report of the Investigative Sector Commission on the application of the COVID-19 vaccine], 19 February 2021, available at: https://www.scribd.com/document/496037083/INFORME-DE-LA-COMISION-SECTORIAL-INVESTIGADORA-DE-LA-APLICACION-DE-LA-VACUNA-CANDIDATA-CONTRA-LA-COVID-19#from_embed (last accessed 3 March 2021), .

[35] The Platform is made up of Indigenous organizations and communities from 15 areas of the country: **1. Amazonas:** Bagua (Imaza, Chiriaco); **2. Ancash:** San Marcos; **3. Cajamarca:** Bambamarca, Hualgayoc, Choropampa; **4. Cusco:** Espinar; **5. Junín:** La Oroya, Ondores, Valle del Mantaro, Chanchamayo; **6. La Libertad:** Huamachuco, (Shiracmaca, El Toro, Santa Cruz, Paranshique y Coigobamba); **7. Lambayeque:**

Ambiental y Humana).[36] The Platform brings together Indigenous people and communities and organizations from 15 different parts of the country, including the province of Espinar in the department of Cusco, to demand support for people and communities affected by metals and toxic substances.

The work of the Platform and the Technical Roundtable has prompted important advances such as the publication in 2018 of MINSA's Sector policy guidelines for the comprehensive care of people exposed to heavy metals and other chemical substances (Lineamientos de la Política sectorial para la atención integral de las personas expuestas a metales pesados y otras sustancias químicas) and the creation in July 2020 of the Temporary Multisectoral Commission for a Comprehensive and Integrated Approach to support the Population Exposed to Heavy Metals, Metalloids and other Toxic Chemical Substances (Comisión Multisectorial Temporal para el Abordaje Integral e Integrado a favor de la Población Expuesta a Metales Pesados, Metaloides y otras Sustancias Químicas Tóxicas)[37] under the Presidency of the Council of Ministers tasked with preparing a technical report with a proposal for a Special Multisectoral Plan for comprehensive intervention to support the population exposed to heavy metals, metalloids and other toxic chemical substances (Plan Especial Multisectorial para la intervención integral a favor de la población expuesta a metales pesados, metaloides y otras sustancias químicas tóxicas).[38] The Commission had an initial period of six months to present the Special Plan;[39] on 25 January 2021, the Resolution that created it was amended to extend the Commission's mandate until 30 June 2021.[40]

Similarly, as a result of the lobbying and efforts by the Platform and the Technical Roundtable, on 30 March 2021, the Congress of the Republic approved Opinion 21-2017-2018/CSP-CR, which includes Draft Law No. 1256/2016 and Draft Law No. 2740/2017 which together would Strengthen Prevention, Mitigation and Health Care for those Affected by Contamination with Heavy Metals and other Chemical Substances.[41] The law, which was promulgated by the President of the Republic on 4 May 2021[42] and its rules of procedure must be adopted in 90 days declares it to be in the national interest for priority be given to address the health of people affected by contamination with heavy metals and other chemical substances and establishes a National Registry of those Affected, among other provisions. Although the regulation represents an important step forward, a historical perspective of the situation in the country shows that there are enormous challenges to ensuring that it is properly implemented and has a real impact on the lives of the people and communities affected.

In October 2020, the Ministry of Health issued Special Report No. 060-2020-JAMC-DENOT-DGIESP/MINSA which stated that more than 10 million people are at risk of exposure to heavy metals and other toxic substances and more than 6 million are at risk of exposure to arsenic and other metalloids.[43]

According to the Ministry of Health's National Health Strategy for the Care of People Affected by Contamination with Heavy Metals and other Chemical Substances, the province of Espinar is an affected area and therefore people living there are at risk of exposure to metals and toxic substances.[44]

Mórrope; **8. Callao**; **9. Lima Provincias:** San Mateo; **10. Loreto:** Plataforma PUINAMUDT 5 federaciones indígenas amazónicas de las cuencas del Pastaza, Corrientes, Tigre y Marañón; **11. Moquegua:** Torata; **12. Pasco:** Cerro de Pasco; **13. Puno:** San Román (Caracoto Juliaca) – Puno, (Capachica, Huata, Coata), Melgar, (Cuenca del río Llallimayo), **14. Huancavelica** y **15. Madre de Dios**.

[36] The Mesa Técnica de Salud Ambiental y Humana is made up of specialized civil society organizations that accompany and advise the Plataforma Nacional de Afectados y Afectadas por Metales Tóxicos.

[37] Ministry of Health, R.M. 718-2018/MINSA, 1 August 2018, available at: https://cdn.www.gob.pe/uploads/document/file/177040/Resolucion-Ministerial-718-2018-MINSA.PDF (last accessed 18 March 2021).

[38] Decreto de creación de la Comisión, Modificatoria, Reglamento y Actas de las Sesiones, available at: https://www.gob.pe/institucion/minam/informes-publicaciones/1625531-comision-multisectorial-temporal-para-el-abordaje-integral-e-integrado-a-favor-de-la-poblacion-expuesta-a-metales-pesados-metaloides-y-otras-sustancias-quimicas-toxicas (last accessed 18 March 2021).

[39] Creation of the Comisión Multisectorial Temporal para el Abordaje Integral e Integrado a favor de la Población Expuesta a Metales Pesados under the President of the Council of Ministers, Supreme Resolution N° 034-2020-PCM, 2 July 2020, available at: https://cdn.www.gob.pe/uploads/document/file/1635810/Resoluci%C3%B3n%20Suprema%20de%20Creaci%C3%B3n%20de%20la%20Comisi%C3%B3n%20Multisectorial%20.pdf (last accessed 18 March 2021).

[40] Supreme Resolution amending Supreme Resolution No. 034-2020-PCM creating the Comisión Multisectorial Temporal para el Abordaje Integral e Integrado a favor de la Población Expuesta a Metales Pesados SURPEME RESOLUTION Nº 007-2021-PCM, 25 January 2021, available at: https://cdn.www.gob.pe/uploads/document/file/1635817/Resoluci%C3%B3n%20Suprema%20de%20Modificaci%C3%B3n%20de%20la%20Comisi%C3%B3n%20Multisectorial%20.pdf (last accessed 18 March 2021).

[41] Available at: https://leyes.congreso.gob.pe/Documentos/2016_2021/Dictamenes/Proyectos_de_Ley/01256DC21MAY20180613.pdf (last accessed 5 April 2020).

[42] Official Gazette El Peruano. Law Nº 31189 to Strengthen Prevention, Mitigation and Health Care for those Affected by Contamination with Heavy Metals and other Chemical Substances, available at: https://busquedas.elperuano.pe/normaslegales/ley-para-fortalecer-la-prevencion-mitigacion-y-atencion-de-ley-n-31189-1949664-1/ (last accessed 5 May 2021).

[43] Vice-Ministry of Public Health, Special Report No. N° 060-2020-JAMC-DENOT-DGIESP/MINSA, 27 October 2020, available at: https://perurec.com/wp-content/uploads/2020/12/Documento-MINSA-metales-toxicos.pdf (last accessed 5 April 2020).

[44] Ministry of Health, National Health Strategy for the Care of People Affected by Contamination with Heavy Metals and other Chemical Substances, Map of Peru: Main Sources of Contamination by Heavy Metals, available at: https://www.minsa.gob.pe/portalweb/06prevencion/prevencion_2.asp?sub5=3 (last accessed 8 March 2021).

Since the publication of its report *A toxic state: Violations of the right to health of Indigenous peoples in Cuninico and Espinar, Peru,*[45] (*A toxic state*) in 2017, Amnesty International has highlighted Peru's failure to fulfil in its obligation to adopt measures to address the urgent health needs of rural communities in Alto Huarca, Cala Cala, Huisa, Huisa Collana, Alto Huancané and Bajo Huancané in the province of Espinar, department of Cusco. In that report, the organization recommended that various measures be adopted, including:

- Design and implement, in a coordinated manner, Emergency Health Plans to address the effects of exposure to heavy metals and other chemical substances in... Espinar. These plans should be developed, implemented and monitored with the participation of experts in harmful metals and representatives of the affected communities, and should also include specific strategies for communication with and accountability to the communities of... Espinar.
- Ensure that the... peasant communities of Espinar have access to the health services they need, including the full operation of existing health facilities, ensuring they are staffed by personnel trained in and capable of providing diagnoses and health care to people exposed to heavy metals and other chemical substances, in accordance with national Clinical Guidelines and international standards. Information on health issues and health services and goods must be accessible, acceptable and of good quality.
- Ensure that the... peasant communities of Espinar have access to sufficient, secure, acceptable, physically accessible and affordable water for personal and domestic use and adequate sanitation.
- Finalize and make public the results of the study commissioned to the IPEN [Peruvian Institute of Nuclear Energy] on the cause of the presence of metals found in the water in Espinar. These results should be shared with the peasant communities in Espinar in an accessible format.
- Ensure that the CENSOPAS [National Centre for Occupational Health and Environmental Health Protection][46] has the necessary capacity and infrastructure to conduct regular evaluations of the exposure of the communities of... Espinar to heavy metals and other chemical substances.
- Ensure that the right to informed consent is respected when people are tested for exposure to heavy metals and other health problems, and that the test results are processed and shared within an appropriate timeframe agreed with the communities involved.
- Implement health promotion and awareness-raising campaigns specialized in the prevention and mitigation of the risks associated with exposure to and poisoning by heavy metals and other chemical substances, focusing particularly on... Espinar.

More than three years have passed since the publication of *A toxic state* and none of the recommendations have been fully implemented. Amnesty International has confirmed that concern persists among the population – and specifically among the Indigenous communities Huano Huano, Pacopata, Huini Coroccohuayco, Alto Huancané, Huancané Bajo, Tintaya Marquiri, Alto Huarca, Cala Cala, Huarca, Huisa Ccollana and Huisa – about the potential impact that extractive activities could have on the environment and public health, especially on water quality and its relationship with human health indicators in areas near Espinar mining operations.

These communities are located in an area that is directly affected – both environmentally and socially[47] – by the Proyecto Antapaccay Expansión Tintaya - Integración Coroccohuayco[48] (Integration Project) that involves

[45] Amnesty International, *A toxic state: Violations of the right to health in Cuninico and Espinar, Peru*, (Index: AMR 46/7048/2017), September 2017.

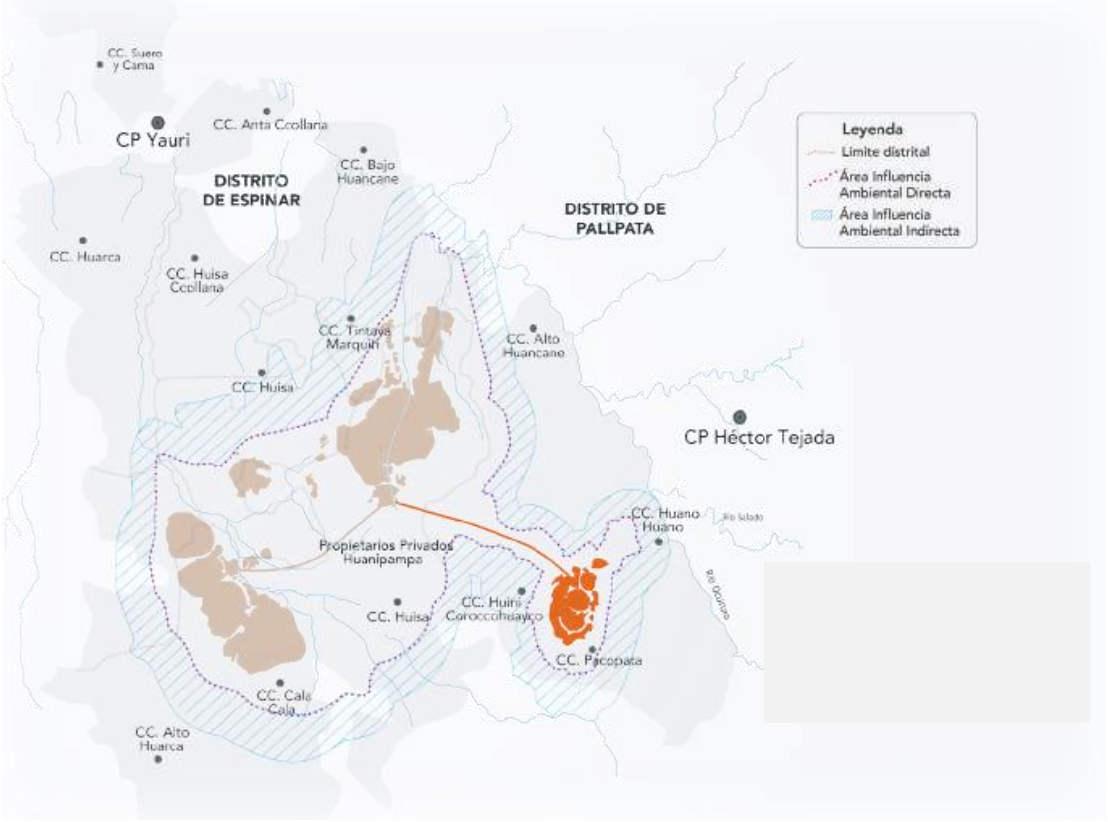
[46] "CENSOPAS is the centre charged with carrying out evaluations, investigations and recommendations for the prevention of diseases and damage to health, resulting from economic activities that can affect workers and the community. It provides specialized medical and psychological evaluation services on occupational and environmental exposure, as well as the evaluation of occupational and environmental risks (physical, chemical, biological and psychosocial)." For more information, see: https://web.ins.gob.pe/es/salud-ocupacional-y-proteccion/salud-ocupacional/censopas/presentacion

[47] According to the Amendment to the Study on Environmental Impact (Modificación del Estudio de Impacto Ambiental, MEIA) of the Integration Project. The MEIA also includes the communities of Suero and Cama and Anta Ccollana which Amnesty International did not meet. Golder Associates, MEIA Antapaccay Expansión Tintaya – Integración Coroccohuayco, November 2019. 4.2 Área de Influencia Social de la MEIA, The area directly affected is defined as "the space where the project components are located and the areas that are directly impacted (environmental and social) by the activity", available at: http://www.senace.gob.pe/wp-content/uploads/2019/06/pub_area-de-influencia-ambiental-y-social-en-un-proyecto-de-inversion.pdf (last accessed 13 April de 2021).

[48] La Modificación del Estudio de Impacto Ambiental (MEIA) del Proyecto Antapaccay Expansión Tintaya - Integración Coroccohuayco was approved by R.D. N° 0196-2019-SENACE-PE/DEAR de 17 December 2019. According to the MEIA, the Proyecto Integrado [Integration Project] consists of: "1. The Zona de Explotación Antapacca, where mineral extraction and crushing activities are carried out; and the Zona de Beneficio Tintaya, where mineral processing activities are carried out to obtain copper concentrates, as well as the disposal of concentrates created by the tailings generated in the process. Both areas make up the current U.M. Antapaccay Expansión Tintaya operation. Alterations to these areas will be carried out to give continuity to current operations. 2. The Zona de Explotación Coroccohuayco, located approximately

expanding the Antapaccay Tintaya Expansion Mining Unit[49] (Antapaccay Mine) owned by Compañía Minera Antapaccay SA, a subsidiary of the Anglo-Swiss transnational Glencore PLC.[50]

These communities self-identify as Indigenous and members of the K'ana People.[51] The designation "peasant community" stems from the Agrarian Reform Law, which states that, from the date on which the law came into force, Indigenous communities would be known as peasant communities;[52] this does not remove the requirement to recognize their origins or the resulting obligation of the state to ensure the full enjoyment of their rights as Indigenous peoples.



Map edited by Amnesty International from the SENACE original, available at https://www.senace.gob.pe/wp-content/uploads/2020/06/24.4.2020_Antapaccay-area_de_influencia.pdf (last accessed 19 February 2021).

On many occasions, communities have expressed their health and environmental concerns in protests, voicing, among other things, their economic, social and environmental demands. In response, on a number

12km southeast of the Zona de Beneficio Tintaya. In this future zone, CMA proposes to carry out mineral extraction for subsequent processing in the existing concentrator plants in the Zona de Beneficio Tintaya". Golder Associates, Executive Summary MEIA Antapaccay Expansión Tintaya – Integración Coroccohuayco, November 2019. According to official information, the project is at the stage of prior consultation with 11 of the 13 communities in the area affected. For more information see, http://www.minem.gob.pe/descripcion.php?idSector=3&idTitular=8757 (last accessed 15 March 2021).

[49] The first exploration of the Tintaya deposit dates back to 1917-1918. On 16 March 1985, the Tintaya open pit began production of copper concentrates under the ownership of the public company subject to private law Empresa Minera Especial Tintaya SA, which was privatized on 29 November 1994. See: VECTOR PERÚ SAC, Plan de Cierre, Unidad Minera Tintaya, J06.82.12.00, August 2006, available at: http://intranet2.minem.gob.pe/web/archivos/dgaam/inicio/resumen/RE_1626390.PDF (last accessed 18 February 2021). The Unidad Minera Antapaccay Expansión Tintaya owned by Compañía Minera Antapaccay SA is part of the expansion of Tintaya, whose mining reserves were exhausted, to two open pits and the use of the depleted pit for tailings deposit and has a detailed Environmental Impact Study (Estudio de Impacto Ambiental detallado, EIAd) that was approved in 2010 by the Ministry of Energy and Mines (MINEM). Antapaccay began operations in 2012 and, to date, has four Supporting Technical Reports (Informes Técnicos Sustentatorios, ITS), approved by the MINEM, which authorize modifications to the project. See, Golder Associates, Estudio de Impacto Ambiental Proyecto Antapaccay – Expansión Tintaya, December 2009 and SENACE, Ayuda Memoria, Proyecto Antapaccay Expansión Tintaya Integración Coroccohuayco, 23 December 2019, available at: https://www.senace.gob.pe/download/comunicaciones/eia-meia/antapaccay/AM-Antapaccay_3.pdf (last accessed 18 February 2021).

[50] Glencore PLC (*Private Liability Company*) is a limited liability company legally domiciled in Jersey in the English Channel, United Kingdom, with headquarters in Baar, Switzerland and operations around the world. For more information, see https://www.glencore.com/dam/jcr:e03a8caf-f2aa-46ad-81c5-821719caf5bf/Glencore_AR20_Interactive.pdf (last accessed 13 April 2021).

[51] The K'ana people are part of the Quechua people that live mainly in the Andean areas of Peru, Ecuador and Bolivia. See, https://bdpi.cultura.gob.pe/pueblos/quechuas (last accessed 3 March 2021). All the communities mentioned can be found in the database Base de Datos de Pueblos Indígenas u Originarios, available at: https://bdpi.cultura.gob.pe/buscador-de-localidades-de-pueblos-indigenas

[52] Decree Law No. 17716, Agrarian Reform Law, Article 115, 24 June 1969.

of occasions, the authorities have set up mechanisms for dialogue between the communities, the authorities and private actors and made a series of commitments. The communities and the organizations supporting them point out that many of the commitments made by the authorities, especially in relation to health, have not been fulfilled, and they maintain, as proof of this, that, despite having created a series of mechanisms, such as those described above, there is still no public health and environmental policy to address the needs of people exposed to metals and toxic substances.

On 22 July 2020, the Presidency of the Council of Ministers created a new specific mechanism for Espinar. Ministerial Resolution No. 174-2020 PCM provided for the formation of a Working Group entitled "Multisectoral Commission responsible for evaluating the possible damage in the area of the Indigenous communities of Huano Huano, Huini Coroccohuayco, Pacopata, Alto Huancané, Huancané Bajo, Tintaya Marquiri, Alto Huarca, Cala Cala, Huarca, Suero y Cama, Huisa Ccollana, Huisa and Anta Ccollana from Espinar province, Cusco department, and the corresponding plan for redress, if necessary".

The Resolution stipulates that the Working Group be made up of a representative of the Ministry of the Environment (Ministerio del Ambiente, MINAM), representing the Presidency of the Council of Ministers, the chair; the Ministry of Energy and Mines (Ministerio de Energía y Minas, MINEM); MINSA; the Environmental Assessment and Enforcement Agency (Organismo de Evaluación y Fiscalización Ambiental, OEFA); the National Agrarian Health Service (Servicio Nacional de Sanidad Agraria, SENASA); the General Directorate of Environmental Health (Dirección General de Salud Ambienta, DIGESA); the National Water Authority (Autoridad Nacional del Agua, ANA); three representatives of the Cusco Regional Government; [53] a representative of the Provincial Municipality of Espinar; a representative of the Local Water Administration (Administración Local del Agua, ALA-Cusco); and two representatives of the 13 Indigenous communities. The Working Group was mandated to present a final report within a period of 180 days, which could be extended.[54]

Given that the 180-day deadline expired without a plan having been formulated, in March 2021 the Espinar communities started a protest to request that a reparations plan be formulated and implemented. In response, the Minister of the Environment and the Deputy Minister for Territorial Governance made a commitment which was officially recorded, with the 13 communities to, among other things, carry out technical evaluation visits to the communities during the last week of March 2021.[55]

It should be noted that CENSOPAS has published two studies, in 2010 and 2013,[56] whose shortcomings were detailed in *A toxic state*,[57] but which nevertheless establish that people living in Alto Huancané, Huisa and Huisa Collana are exposed to metals and toxic substances. There are also at least three health plans for the care of people exposed to metals and toxic substances in the province of Espinar which have either not been implemented or have only been partially implemented[58] and a comprehensive public health and environmental strategy has not been designed to date.

[53] La Gerencia Regional de Recursos Naturales y Gestión del Medio Ambiente, [Regional managment of natural resources and the environment] Regional Directorate for Energy and Mines; and Regional Directorate for Health, Article 3 of Ministerial Resolution No. 174-2020 PCM.
[54] Article 8 of Ministerial Resolution No. 174-2020 PCM.
[55] Minutes of the meetings between the Executive Power and the indigenous communities of Espinar, 12 March 2021.
[56] MINSA – CENSOPAS, Riesgos a la salud por exposición a metales pesados en la provincia de Espinar-Cusco – 2010 [Health risks due to exposure to heavy metals in the province of Espinar-Cusco – 2010], available at: https://bvs.ins.gob.pe/insprint/CENSOPAS/metales_pesados/INFORME%20Espinar-Metales%20pesadosCONGRESO%202012.pdf (last accessed 8 March 2021); MINAM, Mesa de Diálogo Espinar Sub Grupo de Medio Ambiente, Informe final integrado de monitoreo sanitario ambiental participativo de la provincial de Espinar, June 2013, available at: http://www.minam.gob.pe/espinar/wp-content/uploads/sites/14/2013/10/Informe_aprobado.pdf (last accessed 8 March 2021).
[57] Amnesty International, *A toxic state: Violations of the right to health in Cuninico and Espinar, Peru*, (Index: AMR 46/7048/2017), September 2017, pp.33-34.
[58] For more information on health plans, see: Cooperacción, IDL, Derechos Humanos Sin Fronteras and Broederlijk Delen, Metales pesados tóxicos y salud pública: el caso de Espinar, Lima, 2016.

Gerson López Chambi - Community of Alto Huancané

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"I want to know when the state is going to listen to us, we are slowly dying and the state does not listen to us, it turns its back on us."[59]

[59] "Quiero saber cuándo el Estado nos va a escuchar, estamos muriendo lentamente y el Estado no nos escucha, nos da la espalda." Interview with Gerson López Chambi, 30 March 2021.

3.2 HEALTH EMERGENCY IN ESPINAR

In May 2015, the Campesino Community of Huisa (Comunidad Campesina de Huisa), the Association for the Defence of Pacpacco affected by Mining (Asociación para la Defensa de Pacpacco afectado por la Minería, ADEPAMI), the Qquetara Water Users Committee (Comité de Usuarios de Agua Qquetara) and the Defence of Irrigators of the Ccañipía-Espinar Micro-Basin Front (Asociación frente de Defensa de Regantes de la Microcuenca Ccañipía – Espinar FREDERMICE) filed a constitutional compliance action[60] against the Ministry of Health and the Cusco Regional Government for failing to comply with various health regulations.

On 5 December 2019, the Espinar Mixed Court issued a judgment of first instance in which it declared the compliance claim founded in part and ordered the Ministry of Health to comply with the requirement to design and implement a **Public Health Strategy for a Health Emergency with an Action Plan** that contains a) Place or Scope, b) Objective, c) Goals, d) Activities, e) Compliance indicators, f) Responsible parties, g) Timeframe, h) Financing, i) Monitoring and evaluation, j) Summary and j) Recommendations.

The judgment also ordered that the framework of the Strategy and Plan of Action should provide for: i. Establishment of a programme for medical treatment; ii. environmental and sanitary epidemiological monitoring, including continuous monitoring of water safety standards; and iii implementation of a programme of assistance and health care for the population of Yauri Espinar, especially children, pregnant women and the elderly," in order to identify people who may have been affected by the consequences of heavy metal contamination and provide them with appropriate medical treatment".[61]

It also urged the Municipality of Espinar and the Cusco Regional Government to "in coordination with the other state agencies involved, participate urgently in implementing actions to protect the health of the inhabitants of Yauri Espinar and of the affected Campesino Communities, prioritizing the treatment of children, pregnant women and the elderly" and "carry out the studies and prioritize the related project in the shortest time possible, for the provision of drinking water for the district of Yauri Espinar and other districts and Communities affected by contamination, from a source or basin, where there is water free from heavy metal contamination".[62]

On 13 December 2019 and 14 October 2020, the Ministry of Health and the Cusco Regional Government respectively lodged appeals against the judgment calling for it to be revoked. The Ministry of Health called into question almost completely the competence and the Cusco Regional Government in the matter and maintained that a series of actions had been carried out "relating to the health strategy on heavy metals and components generated since 2012, in the province de Espinar" without explaining whether the measures had been properly implemented or how effective they had been.[63]

On 30 December 2020, the Canchis Mixed Decentralized, Settlement and Appeals Chamber of the Cuzco Superior Court issued a final judgment, which is not subject to appeal, confirming the order of the Espinar Mixed Court.

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[60] Article 200 of the Constitution of Peru: "The compliance action, which operates against any authority or official who refuses to abide by a legal rule or administrative act, without prejudice to any legal liabilities."

[61] Cusco Superior Court, Case 00082-2015-0-1009-JM-CI-01, Plaintiff: Campesino Community of Huisa and others Defendant: Regional Health Directorate of Cusco and others Matter: Compliance action Provenance: Mixed Court of Espinar, Reporting Judge: Eduardo Sumire López, Resolution No. 70, 30 December 2020, pp.1-2.

[62] "en coordinación con los otros organismos estatales involucrados, participen de manera urgente, en las acciones de ejecución que permitan la protección de la salud de los pobladores de Yauri Espinar y de las Comunidades Campesinas afectadas, debiendo priorizarse, el tratamiento de los niños, niñas, mujeres gestantes y adultos mayores" y a que "realicen los estudios y prioricen el proyecto respectivo en el tiempo más breve posible, para la provisión de agua potable para el distrito de Yauri Espinar y demás distritos y Comunidades afectadas con la contaminación, desde una fuente o cuenca, donde exista agua libre de contaminación de metales pesados". Cusco Superior Court, Case 00082-2015-0-1009-JM-CI-01, Plaintiff: Campesino Community of Huisa and others Defendant: Regional Health Directorate of Cusco and others Matter: Compliance action Provenance: Mixed Court of Espinar, Reporting Judge: Eduardo Sumire López, Resolution No. 70, 30 December 2020, pp.1-2.

[63] "referidas a la estrategia sanitaria de metales pesados y componentes que se originaron desde el año 2012, dadas en la provincia de Espinar". Cusco Superior Court, Case 00082-2015-0-1009-JM-CI-01, Plaintiff: Campesino Community of Huisa and others Defendant: Regional Health Directorate of Cusco and others Matter: Compliance action Provenance: Mixed Court of Espinar, Reporting Judge: Eduardo Sumire López, Resolution No. 70, 30 December 2020, pp.3. The actions referred to by the Regional Government of Cusco are: 1) Establish a roundtable in Espinar for dialogue on the problems between the population and the Xtrata Tintaya mining company - carried out in April 2012; 2) In January 2013, a new study was developed to determine exposure to heavy metals; 3) within the framework of the Environmental Monitoring Committee for the province of Espinar, in 2016 specialized medical campaigns were carried out as well as monitoring levels of heavy metals for members of communities of Pallpata and Yauri in the province of Espinar; 4) Comprehensive health action plan for the population at risk of heavy metals and metalloids in the provinces of Espinar, Chumbivilcas and the 2019-2021 Convention; 5) Intervention plan regarding heavy metals; 6) comprehensive health intervention plan for the province of Espinar regarding exposure to heavy metals and other chemical substances 2015-2017; 7) local comprehensive health intervention plan for the province of Espinar 2013; 8) health plan for the population exposed to heavy metals in Espinar 2015-2017, among other actions that have been implemented and carried out over the years, which is attested to by photos of the medical campaigns and information sharing events held on practising healthy habits and exposure to heavy metals and metalloids in the province of Espinar, with the advertising spots and press releases.

This judgment is an important first step in creating an emergency public health and environmental strategy for Espinar, which must be formulated in accordance with Peru's obligations under international human rights law.

4. OBLIGATIONS UNDER INTERNATIONAL HUMAN RIGHTS LAW

The bodies responsible for formulating and implementing a Public Health and Environmental Strategy for Espinar must also be guided by the following international standards on human rights and Peru's international obligations to respect, protect and fulfil the right to health.[64]

> **"Indigenous individuals also have the right to access, without any discrimination, to all social and health services. Indigenous individuals have an equal right to the enjoyment of the highest attainable standard of physical and mental health."**
>
> Article 24.1 and 24.2 of the United Nations Declaration on the Rights of Indigenous Peoples

The right to the enjoyment of the highest possible standard of health is recognized in various international instruments to which Peru is a party, including the International Covenant on Economic, Social and Cultural Rights (ICESCR),[65] the American Declaration of the Rights and Duties of Man[66] and the Additional Protocol to the American Convention on Human Rights in the area of Economic, Social and Cultural Rights (Protocol of San Salvador).[67]

Article 12 of the ICESCR guarantees "the right of everyone to the enjoyment of the highest attainable standard of physical and mental health" and the obligation of States Parties to the Covenant to take steps to ensure "[t]he improvement of all aspects of environmental...hygiene".[68]

The Committee on Economic, Social and Cultural Rights (ESCR Committee or Committee) has explained that the right to health imposes on states the obligations to respect, protect and fulfil:

> "The obligation to *respect* requires States to refrain from interfering directly or indirectly with the enjoyment of the right to health. The obligation to protect requires States to take measures that prevent third parties from interfering with article 12 guarantees. Finally, the obligation to fulfil requires States to adopt appropriate

[64] Committee on Economic, Social and Cultural Rights, General Comment No. 14 (2000): The right to the Highest Attainable Standard of Health (Art. 12) E/C.12/2000/4, CESCR, 11 August 2000, paras 34-37.
[65] UN International Covenant on Economic, Social and Cultural Rights, adopted and opened for signature, ratification and accession by General Assembly resolution 2200A (XXI) of 16 December 1966, Article 12. Ratified by Peru on 8 April 1978.
[66] OAS, American Declaration of the Rights and Duties of Man, Approved at the Ninth International American Conference Bogotá, Colombia, 1948, Article XI.
[67] Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights, (Protocol of San Salvador). Ratified by Peru on 17 May 1995.
[68] ICESCR, Article 12.2(b).

legislative, administrative, budgetary, judicial, promotional and other measures towards the full realization of the right to health."[69]

The Committee goes on to explain that in the context of obligation to fulfil "States are also required to adopt measures against environmental and occupational health hazards and against any other threat as demonstrated by epidemiological data. For this purpose they should formulate and implement national policies aimed at reducing and eliminating pollution of air, water and soil, including pollution by heavy metals".[70]

Thus, when determining the scope of the right to health, the Committee has indicated that it includes: **"the prevention and reduction of the population's exposure to harmful substances such as radiation and harmful chemicals or other detrimental environmental conditions that directly or indirectly impact upon human health."**[71]

The 1993 Constitution of Peru also protects the right to health in Article 7 and Article 9 provides that "the State determines the national health policy. The Executive Branch regulates and supervises its application. It is responsible for designing and implementing it in a plural and decentralized manner to facilitate equitable access to health services for all".[72] Likewise, Peru's General Law on Health establishes that in the event of a health crisis, the state must put in place the necessary measures to minimize and control threats to people's health.[73]

THE RIGHT OF ACCESS TO HEALTH SERVICES

The ICESCR provides that the states parties shall adopt measures to create "conditions which would assure to all medical service and medical attention in the event of sickness."[74] The ESCR Committee has indicated that the state's obligation includes: "the provision of equal and timely access to basic preventive, curative, rehabilitative health services and health education... appropriate treatment of prevalent diseases, illnesses, injuries and disabilities, preferably at community level; the provision of essential drugs".[75] The ESCR Committee has also established that: "The right to treatment includes the creation of a system of urgent medical care in cases of accidents, epidemics and similar health hazards, and the provision of disaster relief and humanitarian assistance in emergency situations."[76]

Regarding health care facilities, goods and services, the ESCR Committee also established the essential elements of the right to health,[77] namely:

i. Availability: each State Party must have a sufficient number of public health facilities, goods and services and health care centres for its population.

ii. Accessibility: health facilities, goods and services must be accessible to all. Accessibility has the following elements:

- Non-discrimination: health facilities, goods and services must be accessible to the most vulnerable or marginalized sections of the population without discrimination on any kind.
- Physical accessibility: health facilities, goods and services must be within safe physical reach for all sections of the population, especially vulnerable such as Indigenous peoples. Accessibility also implies that medical services and underlying determinants of health, such as safe and potable water and adequate sanitation facilities, are within safe physical reach, including in rural areas.
- Economic: health facilities, goods and services should be affordable for all.

[69] Committee on Economic, Social and Cultural Rights, General Comment No. 14 (2000): The right to the Highest Attainable Standard of Health (Art. 12) E/C.12/2000/4, CESCR, 11 August 2000, para. 33.
[70] Committee on Economic, Social and Cultural Rights, General Comment No. 14 (2000): The right to the Highest Attainable Standard of Health (Art. 12) E/C.12/2000/4, CESCR, 11 August 2000, para. 36.
[71] Committee on Economic, Social and Cultural Rights, General Comment No. 14 (2000): The right to the Highest Attainable Standard of Health (Art. 12) E/C.12/2000/4, CESCR, 11 August 2000, para. 15.
[72] "el Estado determina la política nacional de salud. El Poder Ejecutivo norma y supervisa su aplicación. Es responsable de diseñarla y conducirla en forma plural y descentralizadora para facilitar a todos el acceso equitativo a los servicios de salud." Article 9 of the Constitution of Peru of 1993.
[73] Peru, Article 105 of the General Law on Health, Law No 26842, 1997.
[74] UN International Covenant on Economic, Social and Cultural Rights, Adopted and opened for signature, ratification and accession by General Assembly resolution 2200A (XXI) of 16 December 1966, Article 12.2(d).
[75] Committee on Economic, Social and Cultural Rights, General Comment No. 14 (2000): The right to the Highest Attainable Standard of Health (Art. 12) E/C.12/2000/4, CESCR, 11 August 2000, para. 17.
[76] Committee on Economic, Social and Cultural Rights, General Comment No. 14 (2000): The right to the Highest Attainable Standard of Health (Art. 12) E/C.12/2000/4, CESCR, 11 August 2000, para. 16.
[77] Committee on Economic, Social and Cultural Rights, General Comment No. 14 (2000): The right to the Highest Attainable Standard of Health (Art. 12) E/C.12/2000/4, CESCR, 11 August 2000, para. 12.

iii. Quality and acceptability: health facilities, goods and services must also be scientifically and medically appropriate and of good quality and culturally acceptable. This requires, skilled medical personnel, scientifically approved and unexpired drugs and hospital equipment, safe and potable water, and adequate sanitation.

To be considered acceptable, information regarding health goods and services must respect medical ethics and be culturally appropriate and sensitive to age, gender, religion and other characteristics. This is a crucial component of the right to health because individuals and communities can only make informed decisions about their health when they have access to complete, accurate, timely and clear information, available in all local languages and in formats that are accessible to all.[78]

RIGHT TO SAFE AND POTABLE WATER

ESCR Committee General Comment No. 14 highlights that the right to health includes access to safe and potable water and adequate sanitation.[79]

Likewise, Article 12.2 of the ICESCR establishes that, in order to achieve the full realization of the right to health, states parties to the Covenant must adopt the necessary measures to ensure: "[t]he improvement of all aspects of environmental... hygiene". In this regard, the ESCR Committee has determined that this obligation includes "the requirement to ensure an adequate supply of safe and potable water and basic sanitation; the prevention and reduction of the population's exposure to harmful substances... that directly or indirectly impact upon human health."[80]

Access to "safe potable water" and protection from "exposure to harmful substances" are, therefore, integral elements of the right to health.[81]

RIGHT OF ACCESS TO INFORMATION ON HEALTH ISSUES

The ESCR Committee has highlighted that one of the dimensions of the right to health is access to information, which "includes the right to seek, receive and impart information and ideas concerning health issues."[82]

RIGHT TO HEALTH OF INDIGENOUS PEOPLES

The right to health of Indigenous peoples is recognized in the American Declaration of the Rights of Indigenous Peoples and in the United Nations Declaration on the Rights of Indigenous Peoples.[83] The American Declaration provides that: "Indigenous individuals also have the right to access, without any discrimination, to all social and health services... Indigenous individuals have an equal right to the enjoyment of the highest attainable standard of physical and mental health."[84]

> International Labour Organization (ILO) Convention No. 169 on Indigenous and Tribal Peoples states in Article 25, among things, that:
>
> 1. 1. Governments shall ensure that adequate health services are made available to the peoples concerned, or shall provide them with resources to allow them to design and deliver such services under their own responsibility and control, so that they may enjoy the highest attainable standard of physical and mental health.
>
> …
>
> 3. 3. The health care system shall give preference to the training and employment of local community health workers, and focus on primary health care while maintaining strong links with other levels of health care services.

[78] Committee on Economic, Social and Cultural Rights, General Comment No. 14 (2000): The right to the Highest Attainable Standard of Health (Art. 12 E/C.12/2000/4, CESCR, 11 August 2000 and the OHCHR and WHO, Fact Sheet No. 31: The Right to Health.
[79] Committee on Economic, Social and Cultural Rights, General Comment No. 14 (2000): The right to the Highest Attainable Standard of Health (Art. 12) E/C.12/2000/4, CESCR, 11 August 2000, para. 4.
[80] Committee on Economic, Social and Cultural Rights, General Comment No. 14 (2000): The right to the Highest Attainable Standard of Health (Art. 12) E/C.12/2000/4, CESCR, 11 August 2000, para. 15.
[81] Committee on Economic, Social and Cultural Rights, General Comment No. 14 (2000): The right to the Highest Attainable Standard of Health (Art. 12) E/C.12/2000/4, CESCR, 11 August 2000, para. 15.
[82] Committee on Economic, Social and Cultural Rights, General Comment No. 14 (2000): The right to the Highest Attainable Standard of Health (Art. 12) E/C.12/2000/4, CESCR, 11 August 2000, para. 12.
[83] United Nations Declaration on the Rights of Indigenous Peoples, 2007, Article 24.
[84] AG/RES. 2888 (XLVI-O/16) American Declaration on the Rights of Indigenous Peoples (Adopted at the third plenary session, held on 14 June 2016), Article XVIII.

4. The provision of such health services shall be co-ordinated with other social, economic and cultural measures in the country.[85]

The ESCR Committee recognizes that Indigenous Peoples "have the right to specific measures to improve their access to health services and care."[86] It highlights that health services should be culturally appropriate; that is, take into account traditional preventive care, healing practices and medicines. States should provide resources for Indigenous peoples to design, deliver and control such services so that they may enjoy the highest attainable standard of physical and mental health.[87]

The ESCR Committee also stresses the importance of "the participation of the population in all health-related decision-making at the community, national and international levels".[88]

The Inter-American Court of Human Rights (Inter-American Court or the Court), when analysing the content and scope of the rights to life and personal integrity as regards possible damage to the environment, has indicated that:

109. "States must take the necessary measures to... safeguard the right of access to the conditions that ensure a decent life, which includes adopting positive measures to prevent the violation of this right. ... **Among the conditions required for a decent life, the Court has referred to access to, and the quality of, water, food and health, and the content has been defined in the Court's case law, indicating that these conditions have a significant impact on the right to a decent existence and the basic conditions for the exercise of other human rights. The Court has also included environmental protection as a condition for a decent life.**

110. Among these conditions, it should be underlined that health requires certain essential elements to ensure a healthy life; hence, it is directly related to access to food and water. In this regard, the Court has indicated that health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. **Thus, environmental pollution may affect an individual's health.**

111. In addition, access to food and water may be affected if pollution limits their availability in sufficient amounts or affects their quality. It should be stressed that **access to water includes access "for personal and domestic use," and this includes "consumption, sanitation, laundry, food preparation, and personal and domestic hygiene,"** and for some individuals and groups it will also include "additional water resources based on health, climate and working conditions." Access to water, food and health are obligations to be realized progressively; however, States have immediate obligations, such as ensuring these rights without discrimination and taking measures to achieve their full realization."[89] (Footnotes omitted)

Finally, Amnesty International recalls that, as stated by the ESCR Committee, violations of the obligation to fulfil the right to health occur when states parties to the ICESCR fail "to adopt all the necessary measures to ensure the realization the right to health." Among the failings highlighted "the failure to adopt or implement a national health policy designed to ensure the right to health for everyone; insufficient expenditure or misallocation of public resources which results in the non-enjoyment of the right to health by individuals or groups, particularly the vulnerable or marginalized".[90]

The above and the available evidence reinforce Peru's obligation to design and implement without delay a Public Health and Environmental Strategy for Espinar, as described in Chapter 6 of this report.

[85] International Labour Organization, Indigenous and Tribal Peoples Convention (No. 169) concerning Indigenous and Tribal Peoples in independent countries. Ratified by Peru on 2 February 1994.
[86] Committee on Economic, Social and Cultural Rights, General Comment No. 14 (2000): The right to the Highest Attainable Standard of Health (Art. 12) E/C.12/2000/4, CESCR, 11 August 2000, para. 27.
[87] Committee on Economic, Social and Cultural Rights, General Comment No. 14 (2000): The right to the Highest Attainable Standard of Health (Art. 12) E/C.12/2000/4, CESCR, 11 August 2000, para. 27.
[88] Committee on Economic, Social and Cultural Rights, General Comment No. 14 (2000): The right to the Highest Attainable Standard of Health (Art. 12) E/C.12/2000/4, CESCR, 11 August 2000, para. 11.
[89] Inter-American Court of Human Rights, Advisory Opinion Oc-23/17 of 15 November 2017 requested by the Republic of Colombia, Environment and Human Rights (State Obligations in Relation to the Environment in the Context of the Protection and Guarantee of the Rights to Life and Personal Integrity: Interpretation and Scope of Articles 4(1) and 5(1), in relation to Articles 1(1) and 2 of the American Convention on Human Rights), paras 109-111.
[90] Committee on Economic, Social and Cultural Rights, General Comment No. 14 (2000): The right to the Highest Attainable Standard of Health (Art. 12) E/C.12/2000/4, CESCR, 11 August 2000, para. 52.

5. NEW EVIDENCE CONFIRMING THE EXPOSURE OF COMMUNITIES IN ESPINAR TO METALS AND TOXIC SUBSTANCES AND OTHER CONDITIONS OF VULNERABILITY THAT COMPROMISE THEIR HEALTH

There is ample scientific evidence on the harmful effects on health associated with exposure to lead, arsenic, cadmium, mercury and manganese.[91] With the exception of manganese, which is a trace element and therefore useful in the human body in very small amounts, none of the other metals and toxic substances mentioned play an essential role in the functioning of the human body. On the contrary, lead, cadmium and mercury are toxic even at low levels in the body, and arsenic, especially inorganic arsenic, is highly toxic.

However, scientific evidence regarding the presence of metals and toxic substances in the environment and their impact on the health of people living in Espinar is still incomplete and inadequate because there is no permanent epidemiological or environmental monitoring which would enable changes in the metals and toxic

[91] See, among others: World Health Organization, Lead poisoning and health, available at: https://www.who.int/news-room/fact-sheets/detail/lead-poisoning-and-health; ATSDR (Agency for Toxic Substances and Disease Registry), Lead - ToxFAQs™, available at: https://www.atsdr.cdc.gov/toxfaqs/tfacts13.pdf; ATSDR (Agency for Toxic Substances and Disease Registry), Arsenic - ToxFAQs™, available at: https://www.atsdr.cdc.gov/toxfaqs/tfacts2.pdf; ATSDR (Agency for Toxic Substances and Disease Registry), Cadmium - ToxFAQs™, available at: https://www.atsdr.cdc.gov/toxfaqs/tfacts5.pdf; World Health Organization, Mercury and health, available at: https://www.who.int/news-room/fact-sheets/detail/mercury-and-health; ATSDR (Agency for Toxic Substances and Disease Registry), Mercury - ToxFAQs™, available at: https://www.atsdr.cdc.gov/toxfaqs/tfacts46.pdf; ATSDR (Agency for Toxic Substances and Disease Registry), Manganese - ToxFAQs™, available at: https://www.atsdr.cdc.gov/toxfaqs/tfacts151.pdf; WHO, (2019), Lead poisoning and health, available at: https://www.who.int/news-room/fact-sheets/detail/lead-poisoning-and-health; ATSDR, (2011), Cadmium Toxicity, What is the Biological Fate of Cadmium in the Body? Available at: https://www.atsdr.cdc.gov/csem/cadmium/docs/cadmium.pdf

substances in the environment and in the different population groups in Espinar to be evaluated. There is also a lack of clarity on the specific socioeconomic and environmental determinants (water, air, soil and food) that can affect people's health and little data on exposure to metals and toxic substances and their relationship to health risks in the communities that live in the area affected by the Integration Project. The Peruvian state is responsible for producing and disseminating this information and must do so urgently.

5.1 WHAT DOES EXPOSURE TO METALS AND TOXIC SUBSTANCES MEAN?

Lead, arsenic, cadmium, mercury, and manganese are known as heavy metals.[92] These metals are present naturally in the earth and are also the product of industrial and extractive activities. Air, water, land and food can be contaminated by these metals. In addition to being heavy, lead, arsenic, cadmium, mercury and manganese are toxic, that is, poisonous and harmful[93] to human and animal health.

Metals and toxic substances can enter the body by breathing contaminated air, by consuming food and water contaminated with lead, arsenic, cadmium, mercury, and manganese, or by contact with contaminated dust and soil. This can happen in homes, on work and recreation sites, and anywhere contaminated with these metals and toxic substances.

The health effects of these metals and toxic substances depend on the amount that has entered the body and the duration of contact. The greater the quantity of a metal that enters the body and the longer the person is exposed, the more serious the damage to health that these metals and toxic substances can cause.

Exposure to metals and toxic substances has a greater impact on people and communities in situations of vulnerability; that is, those who are in a state of vulnerability and at risk from threats to their physical, mental and social health and face barriers to exercising their rights.[94]

For example, children are in a more vulnerable situation since their bodies absorbs metals and toxic substances more easily than adults and they have fewer defences to protect themselves. Thus, young children absorb lead four to five times more lead than adults.[95]

Other vulnerable groups include:[96]

- Pregnant women, because they can absorb more metals and toxic substances that can affect the foetus;
- Older adults with health conditions that can be complicated by exposure to metals and toxic substances;

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[92] Luis F. Londoño-Franco, Paula T. Londoño-Muñoz and Fabian G. Muñoz-Garcia, (2016), Los riesgos de los metales pesados en la salud humana y animal, Biotecnología en el Sector Agropecuario y Agroindustrial, Vol. 14, No. 2, July-December, pp. 145-153, available at: https://www.researchgate.net/publication/307948295_LOS_RIESGOS_DE_LOS_METALES_PESADOS_EN_LA_SALUD_HUMANA_Y_ANIMAL/link/57d2e66908ae6399a38d99ee/download

[93] NHI Instituto Nacional del Cáncer, "toxico", Diccionario del cáncer, available at: https://www.cancer.gov/espanol/publicaciones/diccionario/def/toxico (last accessed 15 March 2021).

[94] Ministerial Resolution No. 979-2018 MINSA. Documento técnico: Lineamientos de política sectorial para la atención integral de la salud de las personas expuestas a metales pesados, metaloides y otras substancias químicas [Technical document: Sectoral policy guidelines for comprehensive health care for people exposed to heavy metals, metalloids, and other chemical substances] 25 October 2018;
Observatorio nacional de la violencia contra las mujeres y los integrantes del grupo familiar [National Observatory of violence against women and family members: Vulnerable groups, available at: https://observatorioviolencia.pe/conceptos-basicos/grupos-vulnerables-ley-n30364/ (last accessed 15 March 2021);
R.M. Cueto, A. Espinoza, H. Guillen, and M. Seminario, (2016), Sentido de comunidad como Fuente de bienestar en poblaciones socialmente vulnerables de Lima, Perú [Sense of community as a source of well-being in socially vulnerable populations of Lima, Peru], PSYKHE Vol. 25, No.1, May, pp. 1-18, available at: https://scielo.conicyt.cl/pdf/psykhe/v25n1/art04.pdf (last accessed 15 March 2021); and M. Benavides, A. Julie, B. Ceron and A. Ximena (2017), Salud oral en poblaciones vulnerables [Oral health in vulnerable populations], Criterios, Vol. 24, No.1, January-December, available at: http://editorial.umariana.edu.co/revistas/index.php/Criterios/article/view/1780 (last accessed 15 March 2021).

[95] World Health Organization, Lead poisoning and health, available at: https://www.who.int/news-room/fact-sheets/detail/lead-poisoning-and-health (last accessed 15 march 2021).

[96] This list of vulnerable groups is drawn from international standards of ethics in research with human beings and from several public health studies that have identified specific groups that may be at greater risk of their health being affected. The causes, characteristics, conditions and implications of people's vulnerability have been described in detail in the Belmont Report of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, USA, 1979, and the Helsinki Declaration, adopted by the World Medical Association in 1964. Bruce G. Gordon, 2020, Vulnerability in Research: Basic Ethical Concepts and General Approach to Review, Ochsner Journal March 2020, 20 (1) 34-38, available at: http://www.ochsnerjournal.org/content/20/1/34 (last accessed 15 April 2021); Dearbhail Bracken-Roche; Emily Bell, Mary Ellen Macdonald and Eric Racine (2017), The concept of 'vulnerability' in research ethics: an in-depth analysis of policies and guidelines, Health Res Policy Syst, 2017; 15: 8, available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5297186/ (last accessed 15 April 2021).

- Indigenous peoples and other people and communities that live in areas of industrial or extractive activities;
- People whose work involves, or involved, industrial or extractive activities that brought them into contact with metals and toxic substances;
- People with chronic diseases, such as asthma, and diseases of the respiratory system, such as emphysema, who are more sensitive to environmental pollution, especially air pollution;
- People with infectious diseases that weaken their ability to resist poisoning with metals and toxic substances;
- People with immunodeficiencies whose defence system cannot protect them from the effects of metals and toxic substances as effectively as those of people whose defence systems are not compromised;
- People living with disabilities;
- People without access to public or private health services; and
- People who do not have information about the risks of exposure to metals and toxic substances and their rights to health and to a healthy environment.

Scientific evidence[97] indicates some of the effects these metals and chemicals have on human health:

LEAD:

This metal can affect almost every organ and system in the body. When it enters the body, lead is distributed throughout the body, reaching the brain, liver, kidneys and bones, and is deposited in teeth and bones, where it builds up over time.[98] The effects of lead poisoning include anaemia and high blood pressure; kidney damage; weakness in the fingers, wrists and ankles and high levels of lead can cause severe brain damage.

Very small quantities of lead can affect children's brains and nervous systems and their ability to learn. Pregnant women who have lead in their bodies can pass this lead to the foetus. The harmful effects of lead include premature birth, smaller babies, decreased mental capacity in children, learning difficulties and retarded growth in young children. Lead can also affect men's reproductive system.[99] Some studies have indicated prolonged exposure to lead can lead to the development of cancer.

Scientists have concluded that there is no level of lead that is normal or acceptable in the human body.[100]

ARSENIC:

Arsenic can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of "pins and needles" in hands and feet. Ingesting or breathing low levels of inorganic arsenic for a long time can cause a darkening of the skin and the appearance of small "corns" or "warts" on the palms, soles, and torso.

Arsenic can reach the foetus in the womb and can also be present in breast milk. Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer of the liver, bladder, and lungs.[101]

[97] Summary based on information from the World Health Organization and the United States Agency for Toxic Substances and Disease Registry.
[98] World Health Organization, Lead poisoning and health, available at: https://www.who.int/news-room/fact-sheets/detail/lead-poisoning-and-health (last accessed 15 march 2021).
[99] ATSDR (Agency for Toxic Substances and Disease Registry), Lead - ToxFAQs™, available at: https://www.atsdr.cdc.gov/toxfaqs/tfacts13.pdf (last accessed 15 March 2021).
[100] World Health Organization, Lead poisoning and health, available at: https://www.who.int/news-room/fact-sheets/detail/lead-poisoning-and-health (last accessed 15 march 2021).
[101] ATSDR (Agency for Toxic Substances and Disease Registry), Arsenic - ToxFAQs™, available at: https://www.atsdr.cdc.gov/toxfaqs/tfacts2.pdf (last accessed 15 March 2021).

CADMIUM:

Long-term exposure to lower levels of cadmium in air, food, or water leads to a build-up of cadmium in the kidneys and possible kidney disease. Other long-term effects are lung damage and fragile bones.

Cadmium can cross the placenta and reach the foetus, which can lead to reduced birth weight and birth size.[102] Contact with cadmium from birth can retard growth in childhood and [103]affect children's ability to learn.[104] The effects of contact with cadmium in children are similar to those seen in adults (kidney, lung and bone damage).

Cigarette smoke contains cadmium and other toxic substances. Cadmium can cause cancer, especially lung cancer.[105]

MERCURY:

Mercury can be toxic to the nervous system, to the immune system for fighting infection, and to the digestive system, skin and lungs, kidneys and eyes. Contact with mercury, even in small amounts, can cause serious health problems. If it crosses the placenta, mercury can affect the development of the foetus in the womb and the early stages of childhood.[106]

Exposure to high levels of metallic, inorganic or organic mercury can cause permanent kidney and brain damage. Effects on the brain may result in irritability, shyness, tremors, changes in vision or hearing, and memory problems.[107] There is insufficient evidence as to whether mercury causes cancer.

MANGANESE:

While our bodies do not need lead, arsenic, cadmium, or mercury in the body, we do need very small amounts of manganese to stay healthy. However, in larger amounts, manganese can be toxic.

Manganese can build up in the brain, bones, liver, kidneys and pancreas[108] when there is prolonged exposure and large amounts of this metal. Exposure in low concentrations of manganese can affect the nervous system in workers, such as slowed hand movements. At higher levels, these effects can be more severe resulting in slow, clumsy movements and other Parkinson's-like symptoms.[109] Other symptoms of prolonged exposure to manganese include anxiety and difficulty learning and memory problems.[110] There is insufficient evidence on whether manganese causes cancer.

Manganese can cross the placenta[111] and affect the brain development of new born babies, and the ability to remember, concentrate and learn in childhood.[112] In conclusion, manganese is an essential nutrient for health in very small amounts, but is toxic at higher levels and with prolonged exposure.

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[102] Claudia Gundaker and Markus Hengstschläger, (2012), The role of the placenta in fetal exposure to heavy metals, Wien Med Wochenschr, May 162 (9-10), pp. 201-206, available at: https://pubmed.ncbi.nlm.nih.gov/22717874/ (last accessed 15 March 2021).
[103] Leda Chatzi, et al., (2018), Associations of Prenatal Exposure to Cadmium With Child Growth, Obesity, and Cardiometabolic Traits, American Journal of Epidemiology, Vol. 188, Issue 1, January 2019, pp. 141–150.
[104] Klara Gustin, Fahmida Tofail, Marie Vather and Maria Kippler, (2018), Cadmium exposure and cognitive abilities and behavior at 10 years of age: A prospective cohort study, Environment International Vol. 113, pp. 259-268.
[105] ATSDR (Agency for Toxic Substances and Disease Registry), Cadmium - ToxFAQs™, available at: https://www.atsdr.cdc.gov/toxfaqs/tfacts5.pdf (last accessed 15 March 2021).
[106]World Health Organization, Mercury and health, taken from https://www.who.int/news-room/fact-sheets/detail/mercury-and-health (last accessed 15 March 2021).
[107] ATSDR (Agency for Toxic Substances and Disease Registry), Mercury - ToxFAQs™, available at: https://www.atsdr.cdc.gov/toxfaqs/tfacts46.pdf (last accessed 15 March 2021).
[108] Stephanie L. O'Neal and Wei Zheng, (2015), Manganese Toxicity Upon Overexposure: a Decade in Review, Curr Environ Health Rep., September, Vol. 2, No. 3, pp. 315–328.
[109] ATSDR (Agency for Toxic Substances and Disease Registry), Manganese - ToxFAQs™, available at: https://www.atsdr.cdc.gov/toxfaqs/tfacts151.pdf (last accessed 15 March 2021).
[110] Donna J. Coetzee, et al., (2016), Measuring the impact of manganese exposure on children's neurodevelopment: advances and research gaps in biomarker-based approaches, Environmental Health, Vol. 15, No. 91.
[111] Robert B. Gunier, et al., (2014), Biomarkers of manganese exposure in pregnant women and children living in an agricultural community in California, Environmental Science and Technology, Vol. 48, pp. 14695-14702.
[112] Donna J. Coetzee, et al., (2016), Measuring the impact of manganese exposure on children's neurodevelopment: advances and research gaps in biomarker-based approaches, Environmental Health, Vol. 15, No. 91.

5.2 NEW SCIENTIFIC EVIDENCE ON EXPOSURE TO METALS AND TOXIC SUBSTANCES IN ESPINAR

The scientific study carried out by Amnesty International in which blood and urine samples from 150 people were tested in a laboratory, revealed cases where levels of lead, cadmium, arsenic, mercury and manganese exceed the reference values used for the study.[113] It is very possible that the number of people with worrying levels of metals and toxic substances in the body indicates the situation among the larger population of approximately 8,000 people who live in Indigenous[114] communities in similar conditions to the people in the homes and communities analysed.

Taking into account the reference values, the following results stand out (see Annex II for the complete set of results):

[113] "The reference values for a given test are based on the results that are seen in 95% of the healthy population... Also called normal range, reference interval, and reference range." (Source: Dictionary - National Cancer Institute - US Department of Health and Human Services), available at: https://www.cancer.gov/publications/dictionaries/cancer-terms/def/reference-values (last accessed 9 March 2021). For the reference values used in this study, see Annex I.

[114] However, getting accurate and up-to-date demographic data is extremely complex due to the rural nature of the population made up of hard-to-reach communities, the difficulty of conducting a complete census and registration, and the population's migration dynamics.

- **7 PARTICIPANTS HAD VALUES EQUAL TO OR GREATER THAN THE REFERENCE VALUE OF 5µG/DL OF LEAD THE IN BLOOD**

The laboratory result indicates that lead entered the body and is circulating in the blood in the 30 to 60 days before the sample is taken.[115]

- **19 PARTICIPANTS HAD VALUES EQUAL TO OR GREATER THAN THE REFERENCE VALUE OF 1µG /L OF CADMIUM IN THE URINE**

The laboratory result indicates that cadmium has been present in the body for between 6 and 38 years in the kidneys and from 4 to 19 years in the liver. Because cadmium stays in the body for so long, the urine result indicates the body burden of cadmium in the body.[116]

- **88 PARTICIPANTS HAD VALUES EQUAL TO OR GREATER THAN THE REFERENCE VALUE OF 15µG/L OF ARSENIC IN THE URINE AND 17 PARTICIPANTS HAD VALUES GREATER THAN THE REFERENCE VALUE OF 50µG /L OF ARSENIC IN THE URINE**

The laboratory result indicates the arsenic that has entered the body and reached the urine in the 2 to 4 days before the sample is taken.[117]

- **5 PARTICIPANTS HAD VALUES EQUAL TO OR GREATER THAN THE REFERENCE VALUE OF 5µG /L OF MERCURY IN THE URINE**

The laboratory result indicates that mercury entered the body and reached the urine in the 18 to 24 days before the sample is taken.[118]

- **38 PARTICIPANTS HAD VALUES GREATER THAN THE REFERENCE VALUE OF 15 µG/L OF MANGANESE IN THE BLOOD AND 6 ABOVE THE REFERENCE VALUE OF 2.9µG /L OF MANGANESE IN THE URINE**

The laboratory results indicate that manganese entered the body and is found in the blood and urine in the 40 days prior to the collection of the sample.[119]

These results enable us to conclude that, according to the scientific study carried out by the Amnesty International research team, the population of Espinar is exposed to metals and toxic substances.

Laboratory tests yielded results of particular concern in 16 people: 14 people with more than one metal above the reference value and two with significantly higher levels of one metal. This concern stems from the fact that the population is exposed at the same time to both high levels of various metals and to toxic substances.[120]

Amnesty International interviewed 11 of the 16 people whose cases are viewed as emblematic and they reported having the following symptoms:

NEUROLOGICAL	Chronic tiredness, headaches, cramps in the hands and feet, nausea and vomiting, drowsiness[121]
RESPIRATORY/PULMONARY	Lung pain[122]
DIGESTIVE	Rectal ulcer, haemorrhoids, stomach pain, nausea and vomiting[123]
EYES	Blindness[124]
CARDIOVASCULAR	Chest pain[125]

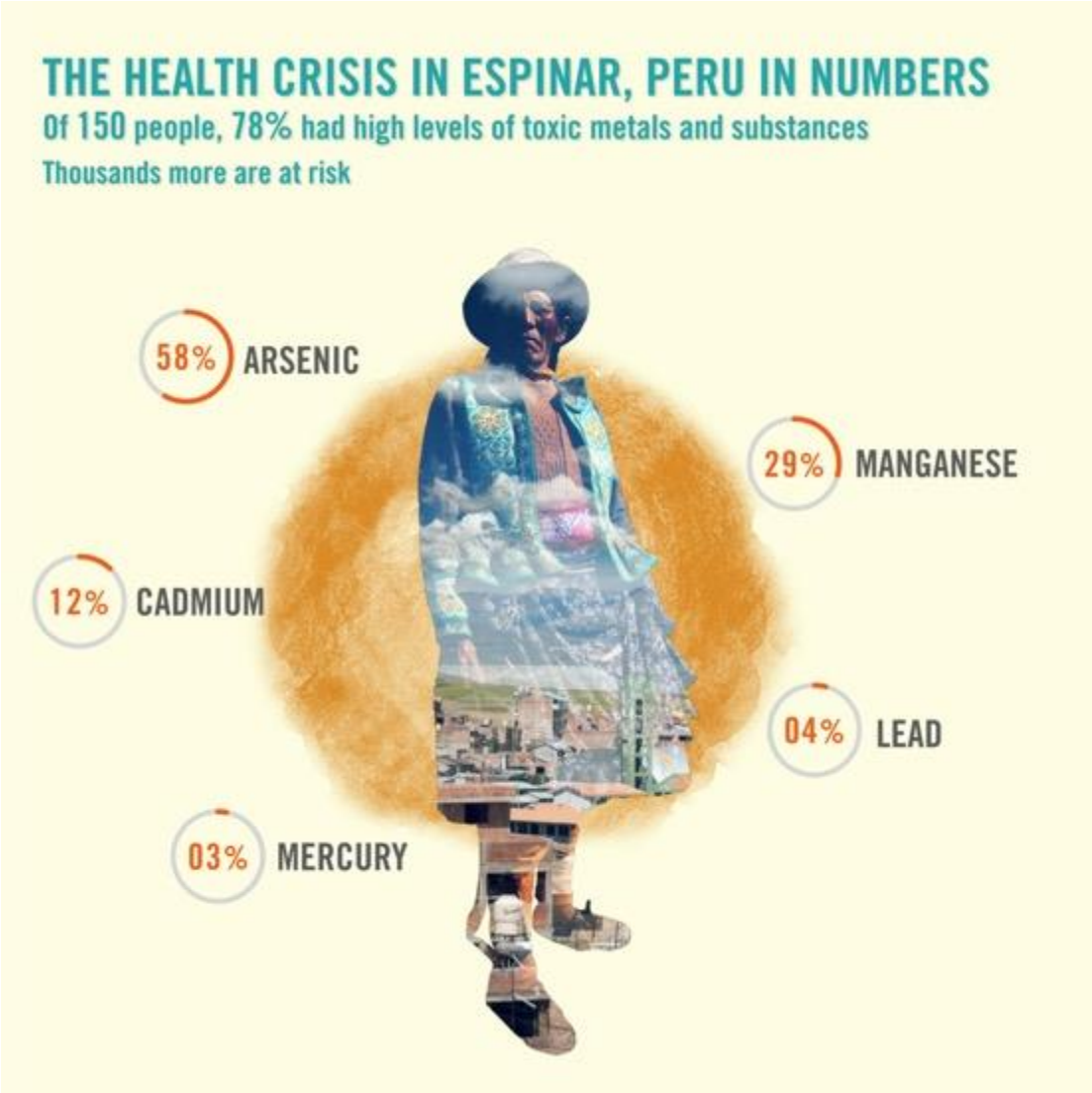
[115] CDC, Biomonitoring Summary, Lead, available at: https://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html (last accessed 15 March 2021).
[116] ATSDR, (2011), Cadmium Toxicity, What is the Biological Fate of Cadmium in the Body, p. 21, available at: https://www.atsdr.cdc.gov/csem/cadmium/docs/cadmium.pdf (last accessed 15 March 2021).
[117] CDC, Biomonitoring Summary, Arsenic, available at: https://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html (last accessed 15 March 2021).
[118] Quest Diagnostics, Mercury, available at: http://education.questdiagnostics.com/faq/FAQ45 (last accessed 15 March 2021).
[119] Mayo Clinic Labs, Manganese, Blood, available at: https://www.mayocliniclabs.com/test-catalog/Clinical+and+Interpretive/89120 (last accessed 15 March 2021).
[120] Adrian Covact, Handling Editor, Statement on advancing the assessment of chemical mixtures and their risks for human health and the environment, Environment International 134 (2020) 105267.
[121] Interviews with 051 HC, 123 TM, 080 AE, 017 BE, 018 BE and 109 PA.
[122] Interview with 045 BE.
[123] Interviews with 120 TM, 080 AE, 017 BE and 077 TM.
[124] Interview with 018 BE.
[125] Interview with 123 TM.

RENAL	Pain in the kidneys[126]
RHEUMATIC	Bone pain[127]
URINARY	Prostate problems[128]
DENTAL	Tooth staining and loss[129]

Two people also reported having cancerous tumours.[130] None of the individuals produced medical certificates or diagnoses, so the report of symptoms reflects the perception of the interviewees or previous medical diagnoses.

It is not possible to directly link exposure to metals and toxic substances to the symptoms and diseases reported by interviewees or to compare this exposure with groups who have not been exposed because such comparative studies have not been done. However, **exposure to metals and toxic substances has been proved and there is scientific evidence of the damage that such exposure can cause to health. This allows us to conclude that the communities of Espinar are in a situation where their health is at risk that this must be treated as an emergency.**

[126] Interviews with 123 TM, 045 BE and 136 TM.
[127] Interview with 045 BE.
[128] Interview with 122 TM.
[129] Interview with 017 BE.
[130] Interview with 120 TM and 045 BE.



5.3 THE INDIGENOUS COMMUNITIES OF ESPINAR EXPERIENCE OTHER VULNERABILITY FACTORS OF THAT PUT THEIR HEALTH AT RISK

The right to health comprises a broad set of factors that can contribute to a healthy life. The ESCR Committee calls these "the underlying determinants of health".[131] These are:

[131] OHCHR/WHO, Fact Sheet No. 31: Right to health, available at: https://www.ohchr.org/documents/publications/factsheet31.pdf (last accessed 31 March 2021).

- Safe drinking water and adequate sanitation;
- Safe food;
- Adequate nutrition and housing;
- Healthy working and environmental conditions;
- Health-related education and information;
- Gender equality.

The Indigenous communities of Espinar, in addition to being exposed to metals and toxic substances, lack certain basic conditions that put their right to health at greater risk. The full realization of this right depends on the exercise of other human rights, such as the rights to food, water, to an adequate standard of living, to adequate housing, to freedom from discrimination, to privacy, to access to information, to participation and the right to benefit from scientific progress and its applications.[132]

Amnesty International carried out a survey of 134 households, made up of a total of 508 people, which revealed a risk profile mainly related to social and economic factors and identified a shortfall in terms of an adequate standard of living and level of water security, as well as community concerns about the environment.

RIGHT TO AN ADEQUATE STANDARD OF LIVING

The right of everyone to an adequate standard of living for themselves and their family, including adequate food, clothing and housing, and to a continuous improvement of living conditions, is recognized in Article 11 of the ICESCR. The right to an adequate standard of living includes adequate food, clothing and housing, as well as the right to "be protected against hunger", the right to health and the right to education.[133]

According to the results of the study carried out by Amnesty International in Espinar, the majority of people are not guaranteed the minimum essential levels of these rights, as they live in social and economic conditions of exclusion and poverty with limited or insecure means of subsistence.

The livelihood of most of the population depends on a subsistence economy based on small-scale agriculture and livestock and most people live in their own homes. However, these dwellings belong to the poorest categories in the socioeconomic stratification used for the survey.[134] In addition, 36.09% of these homes do not have electricity. Most households have latrines of varying quality. However, there is no wastewater treatment in the communities.

The majority of the population indicated that they do not have access to health insurance or adequate health services: 50.79% of the people surveyed do not have health insurance and 63.28% indicated that there are no health services in the community. Most of the people surveyed indicated that they live in a situation of food insecurity: 68.65% could not obtain all the food they needed and 71.63% did not have enough resources to obtain varied and nutritious food.

Most of the people surveyed (79.9%) belong to households of between one and six people with a low level of education: 5.3% did not go to school, 16.5% finished primary school and only 23.8% finished high school.

RIGHT TO WATER

As stated in Chapter 4, although the right to water is not expressly recognized as an independent human right in international treaties, international human rights standards include specific obligations in relation to access to safe drinking water.[135] These obligations require states to guarantee everyone access to a sufficient quantity

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[132] OHCHR/WHO, Fact Sheet No. 31: Right to health, available at: https://www.ohchr.org/documents/publications/factsheet31.pdf (last accessed 31 March 2021).

[133] Committee on Economic, Social and Cultural Rights, General Comment No. 12; the right to adequate food (Article 11 of the ICESCR), E/C.12/1999/5, 12 May 1999.

[134] The survey team classified dwellings as belonging to one of five categories: A, B, C+, C-, or D. Categories A and B are upper and middle class homes where the house is built with durable materials (cement, brick and wooden or tile floors), is larger and has several bathrooms and showers, and its residents have goods such as vehicles, a refrigerator, a gas stove, televisions, sound equipment and internet access. Category C indicates low-income households characterized by living in houses made of less durable materials, with a bathroom inside or outside the house, and with few goods such as televisions, refrigerators and sound equipment. Category D households are those in a situation of greatest poverty, with precarious housing, dirt floors, corrugated iron roofs and few goods. This socioeconomic stratification methodology has been used in many countries to obtain a more complete profile of the social and economic situation of an individual and their household. Similarly, in Peru the concept of "socio-economic levels" (niveles socio económicos, NES) has been used, which includes the level of education, type of home and bathroom, household goods and equipment and public services such as cable television and the internet. Niveles Socioeconómicos 2020, APEIM, Lima, October 2020, available at: http://apeim.com.pe/wp-content/uploads/2020/10/APEIM-NSE-2020.pdf) (last accessed 25 March 2021).

[135] OHCHR/WHO/UN HABITAT, Fact Sheet No. 35: The Right to Water, available at: https://www.refworld.org/docid/4ca45fed2.html (last accessed 31 March 2021).

of potable water for personal and domestic use, which includes consumption, sanitation, laundry, food preparation, and personal and domestic hygiene. They also require them to progressively ensure access to adequate sanitation services, as a fundamental element for human dignity and privacy, but also to protect the quality of drinking-water supplies and resources.[136]

According to the people surveyed in Espinar, the water used in homes comes from puquios or springs, rain, rivers, as well as tanker trucks and/or pipes that bring water from the area near the mining company that operates in the area. Most of these households said they did not have access to other water sources and did not have sufficient water. Only 6.71% said that they always have enough water and 9.7% said that they only occasionally lack sufficient water. In most households, there is often (58.95%) or never (24.62%) enough water to meet drinking, cooking and personal hygiene needs.

The scientific study carried out by Amnesty International in the area showed the presence of coliforms in the water. The qualitative evaluation of total coliforms gave positive results (with coliforms) in 51.5% of a total of 64 samples collected in February 2019 and in 92.9% of a total of 127 samples collected in October 2019.

Coliforms are a group of bacteria generally found in soil, water, and plants. They are also present in the intestines of people and animals and aid digestion. Most coliforms do not cause disease. However, coliforms that are found in the intestines of people and animals and that appear in the faeces (faecal coliforms) are indicators of the presence of bacteria such as Escherichia Coli (E. Coli) and Salmonella that can harm health, causing, for example, vomiting, diarrhoea, nausea and fever. **Therefore, the presence of total coliforms is an important indicator that water is not clean and safe for human consumption and puts people's health at risk.**

In countries such as the USA[137] and Canada,[138] it has been established that coliforms should not be present in water for human consumption because even in small quantities they were linked to outbreaks of infectious disease. In 2010 Peru also established a similar parameter.[139] However, in 2017 the permissible limit for coliforms in water was changed to 50MPN/100ml (MPN means "most probable number") for category A1; that is, water that can be made drinkable with disinfection.[140]

[136] OHCHR/WHO/UN HABITAT, Fact Sheet No. 35: The Right to Water, available at: https://www.refworld.org/docid/4ca45fed2.html (last accessed 31 March 2021).
[137]The US Environmental Protection Agency (EPA) in its review of the 2013 total coliform standard, determined that the Maximum Contaminant Level Target (MCLG) for total coliforms should be zero. EPA, Revised Total Coliform Rule And Total Coliform Rule, Available at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-and-total-coliform-rule (last accessed 25 March 2021).
[138]The standard in Canada is "not detectable" for coliforms in every 100ml of water. Canadian Drinking Water Quality Guideline, Available at: https://www2.gnb.ca/content/dam/gnb/Departments/h-s/pdf/en/HealthyEnvironments/water/Coliforme.pdf (last accessed 25 March 2021).
[139]Maximum allowable limit of zero for coliforms, measured as CFU (Colony-Forming Unit) in 100ml of water at 35°C. Regulation on the Quality of the Water for Human Consumption, DS No 031-2010-SA, General Directorate for Environmental Health, Ministry of Health, Lima, Peru, 2010. Available at: http://bvs.minsa.gob.pe/local/MINSA/1590.pdf (last accessed 25 March 2021).
[140]Regulation on the Quality of the Water for Human Consumption, DS No 031-2010-SA, General Directorate for Environmental Health, Ministry of Health, Lima, Peru, 2010. Available at: http://bvs.minsa.gob.pe/local/MINSA/1590.pdf (last accessed 25 March 2021). MINAM, Supreme Decree No. 004-2017, available at: https://www.minam.gob.pe/disposiciones/decreto-supremo-n-004-2017-minam/ (last accessed 25 March 2021).

Hermelinda Umasi Magaño - Bajo Huancané Community
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[IT'S] OUR RIVER AND IT'S DEAD

"Water is life, animals, people and even spirits live on water. Water is life. God wishes life to be between fire and water. Our water was clean, we used to drink from there… I drink [water] from the river that runs down the ravine, drawing from the side. Now on the 25th or 28th of each month the mayor brings… water in a cistern... the water they bring us is not enough for me at all. To wash our clothes and to bathe we have to draw water from the river. But the water does not arrive here where we are and the water that I drink now is from the river.

I just boil it and wash my hands. This water has a salty taste, neither tea nor food comes out good with this water. The smell of this water is like rotting mud and its taste is salty and it's bluish in colour. While the water in my house over there is yellow and stinks. Here I drink rainwater, I have a Rotoplas where I store water from the corrugated roof. If there isn't much water and it runs out, I have no choice but to draw it from the river.

In the rainy season I drink rainwater and I keep that water until May or June and we have to ration it".[141]

ENVIRONMENTAL CONCERNS

Human rights and environmental protection are interdependent. A safe, clean, healthy and sustainable environment is necessary for the full enjoyment of human rights, including the rights to life, to the highest attainable standard of physical and mental health, to an adequate standard of living, to adequate food, to safe drinking water and sanitation, to housing.[142]

The obligations of states to respect human rights, to protect the enjoyment of human rights from harmful interference, and to fulfil human rights by working towards their full realization all apply in the environmental context. States should therefore refrain from violating human rights through causing or allowing environmental harm; protect against harmful environmental interference from other sources, including business enterprises, other private actors and natural causes; and take effective steps to protect the environment.[143] While it may not always be possible to prevent all environmental harm that interferes with the full enjoyment of human

[141] Interview with Hermelinda Umasi Magaño, 21 September 2020.
[142] OHCHR, FRAMEWORK PRINCIPLES ON HUMAN RIGHTS AND THE ENVIRONMENT, available at: https://www.ohchr.org/Documents/Issues/Environment/SREnvironment/FrameworkPrinciplesUserFriendlyVersion.pdf (last accessed 31 March 2021).
[143] OHCHR, FRAMEWORK PRINCIPLES ON HUMAN RIGHTS AND THE ENVIRONMENT, available at: https://www.ohchr.org/Documents/Issues/Environment/SREnvironment/FrameworkPrinciplesUserFriendlyVersion.pdf (last accessed 31 March 2021).

rights, states should undertake due diligence to prevent such harm and reduce it to the extent possible, and provide for remedies for any remaining harm.[144]

The Inter-American Court of Human Rights has included the protection of the environment as a condition for a dignified life. States must take the necessary measures to safeguard the right of access to the conditions that ensure a decent life, including access to and the quality of, water, food and health, and protection of the environment.[145]

The study carried out by Amnesty International in Espinar shows the deep concern of Indigenous communities about the environmental situation. All (100%) of the people surveyed indicated that they are concerned about water. In the first response about what concerns them most about water, respondents indicated that it is access to water (47.01%), water contamination (38.05%) and the change in the taste of the water (13.43%). In a second response, respondents said they are concerned that the water may be contaminated (45.52%), that the water may affect health (36.56%) and the change in colour of the water (5.97%). The majority of respondents (84.32%) believe that the water is not clean and safe.

In their first response on environmental problems that affect the community, respondents indicated that drought is the main problem they face (47.01%), followed by water pollution (43.28%) and the decline in soil fertility (6.71%).

In their second response on environmental problems affecting the community, the people surveyed said that water pollution is the main problem that the community is concerned about (48.06%), followed by air pollution (35.65%) and the decline in soil fertility (6.97%).

It is especially worrying that the state has not carried out the necessary studies to determine the origins and scope of this persistent concern among the communities about the quality of the water and environmental conditions in general, the possible impact on the health of members of the communities and effective mitigation and/or remediation measures.

It should be added that, although the pandemic has affected the entire population, populations such as those living near industrial and extractive operations have been doubly affected, as has been stated by the organizations that make up the National Platform for People Affected by Toxic Metals (Plataforma Nacional de Afectados y Afectadas por Metales Tóxicos) and the National Roundtable of Environmental and Human Health (Mesa Nacional de Salud Ambiental y Humana). In addition to the very real precarious economic and food situation, water insecurity and lack of health care experienced by the Indigenous communities of Espinar, there is also exposure to metals and toxic substances that give rise to "underlying chronic conditions" and the consequent increase in the risk of suffering the most serious effects of COVID-19.[146]

[144] OHCHR, FRAMEWORK PRINCIPLES ON HUMAN RIGHTS AND THE ENVIRONMENT, available at: https://www.ohchr.org/Documents/Issues/Environment/SREnvironment/FrameworkPrinciplesUserFriendlyVersion.pdf (last accessed 31 March 2021).

[145] Inter-American Court of Human Rights, Advisory Opinion Oc-23/17 of 15 November 2017 requested by the Republic of Colombia, Environment and Human Rights (State Obligations in Relation to the Environment in the Context of the Protection and Guarantee of the Rights to Life and Personal Integrity: Interpretation and Scope of Articles 4(1) and 5(1), in relation to Articles 1(1) and 2 of the American Convention on Human Rights), para. 109.

[146] Comunicado Frente al coronavirus, ATENCIÓN NACIONAL para los afectados por metales tóxicos [Statement during coronovirus: NATIONAL CARE provision for those affected by toxic metals], March 2020, available at: http://grufides.org/blog/comunicado-frente-al-coronavirus-atenci-n-nacional-para-los-afectados-por-metales-t-xicos (last accessed 24 March 2021).

6. THE NEED FOR A PUBLIC HEALTH AND ENVIRONMENTAL STRATEGY FOR ESPINAR

The results of the study carried out by Amnesty International, Derechos Humanos Sin Fronteras and Dr Fernando Serrano PhD provide rigorous and reliable scientific evidence demonstrating the urgent need to design and implement a public health and environmental strategy for Espinar that takes into account the elements described in the compliance action judgment of 30 December 2020.

The methodology and results of the study are relevant for the design and implementation of health care services for people affected by metals and toxic substances, for the environmental and health epidemiological monitoring programme, and for the provision of drinking water. In particular, the following points of the judgment and their relationship with the evidence presented in this report stand out and should be included in the Emergency Public Health and Environmental Strategy:

INCLUSION OF THE WHOLE POPULATION AS VULNERABLE

The judgment emphasizes the need to give priority to children, pregnant people and the elderly, which is correct. However, the analysis of the results of the biological samples and the vulnerability profile of the Indigenous communities of Espinar (see Chapter 5.3) indicates that the entire population of the communities that live in the vicinity of industrial or extractive activities should be considered to be at risk.

COMPREHENSIVE EPIDEMIOLOGICAL MONITORING PROGRAMME

The laboratory results of the analysis of biological samples presented in this report (see Section 5.2) indicate relatively recent exposure to metals and toxic substances, but previous studies from 2010 and 2013[147] found metals and toxic substances in blood and urine that indicate that there is chronic long-term exposure in the Indigenous communities of Espinar.

Therefore, a comprehensive and permanent epidemiological monitoring system must be implemented as a matter of urgency that allows systematic monitoring of the incidence and prevalence of metals and toxic substances and other health and disease indicators throughout the population. This monitoring must be timely and must be carried out through laboratory tests every year or more frequently, depending on the level of metals found in particular groups.

Respondents indicated that only 32.33% had ever previously had a laboratory test for metals and toxic substances done. The small percentage of the population who had had laboratory tests for metals and the fact

[147] MINSA – CENSOPAS, Riesgos a la salud por exposición a metales pesados en la provincia de Espinar-Cusco – 2010 [Health risks due to exposure to heavy metals in the province of Espinar-Cusco – 2010], available at: https://bvs.ins.gob.pe/insprint/CENSOPAS/metales_pesados/INFORME%20Espinar-Metales%20pesadosCONGRESO%202012.pdf (last accessed 8 March 2021); MINAM, Mesa de Diálogo Espinar Sub Grupo de Medio Ambiente, Informe final integrado de monitoreo sanitario ambiental participativo de la provincial de Espinar [Final complete report of participative health and environmental monitoring in the province of Espinar], June 2013, available at: http://www.minam.gob.pe/espinar/wp-content/uploads/sites/14/2013/10/Informe_aprobado.pdf (last accessed 8 March 2021).

that these have been sporadic mean that a complete profile of exposure to metals and toxic substances in the entire population and its variation over time has not been possible.

The epidemiological monitoring system must be implemented in accordance with protocols governing the quality and rigour of the laboratory testing process to ensure the validity and reliability of the results. For example, the Amnesty International study was conducted following protocols appropriately designed and approved by an Ethics Committee. These protocols should include the following: informed consent methods and procedures; how biological samples are obtained, kept and handled; laboratory analysis and updated reference values in line with the most advanced scientific knowledge; and secure data handling and protection measures for confidential information.

It should be noted that the reference values for lead, arsenic, cadmium, and mercury contained in the Ministry of Health guidelines for the treatment of metal poisoning by these substances are outdated. The guidelines on lead date from 2017;[148] those of mercury and cadmium from 2013;[149] and those for arsenic from 2011.[150] The reference values, the populations at risk and the criteria not only for treatment but above all for the prevention of exposure to metals and toxic substances must reflect the most advanced scientific evidence already in use internationally.

The epidemiological monitoring system must also include an information plan and timely delivery of data and laboratory results to the people tested. Reports of results must be prepared and presented in a way that can be understood by people, especially by those most affected, such as Indigenous communities. Of the people surveyed who had been tested at some point prior to the study, 67.44% indicated that they had been given the results, although some with a long delay, and 20.93% indicated that they never received their results. Of those who received results, 55.88% understood the results of the analysis and 47.05% did not.

The judgment in the compliance action expresses concerns about the delay in conducting studies, irregularities in their execution, and delays in delivering results without the proper information on reference values and the health risks posed by metals and toxic substances to the people involved, the community, civil society organizations and the public.[151] It is therefore important to emphasize the need to provide valid and useful information in a timely and understandable manner as an essential part of the epidemiological monitoring programme.

ENVIRONMENTAL MONITORING PROGRAMME

Human health is intimately linked to the natural and built environment. The water quality results indicate that there is no water security in Indigenous communities (or in population centres such as the city of Yauri).[152] The opinions of the respondents highlight the great concern that exists about the quality of water, air and soil for health and economic security. Consequently, an environmental monitoring programme that includes "constant monitoring of water safety standards" needs to be implemented, as stated in the judgment of the compliance action. This monitoring should be extended to other potential sources and routes of exposure to metals and toxic substances such as air, soil, dust and food. An environmental monitoring programme and the epidemiological monitoring programme are two essential and inseparable components of an effective public health strategy for vulnerable populations living in areas affected by industrial or extractive operations.

HEALTH CARE PROGRAMME AT ALL LEVELS OF PREVENTION

The medical care that compliance action requires for people affected by metals and toxic substances must extend to all levels of prevention: i) primary prevention that reduces and prevents contamination by metals and toxic substances and other threats to health in the first place; ii) secondary prevention that provides timely treatment and follow-up for those who have been exposed to metals and toxic substances to avoid health complications and impacts on the quality of life that can result from chronic conditions; and iii) tertiary prevention that includes medical care in cases of high levels of metals and toxic substances and chronic

[148] Ministerial Resolution No. 400-2017-MINSA.
[149] Ministerial Resolution No. 757-2013-MINSA
[150] Ministerial Resolution No. 389-2011-MINSA.
[151] Cusco Superior Court, Case 00082-2015-0-1009-JM-CI-01, Plaintiff: Campesino Community of Huisa and others Defendant: Regional Health Directorate of Cusco and others Matter: Compliance action Provenance: Mixed Court of Espinar, Reporting Judge: Eduardo Sumire López, Resolution No. 70, 30 December 2020, pp. 6-19.
[152] Cusco Regional Health Directorate, Red de Servicios de Salud Canas Canchis Espinar, File No. 81256-2018-GR-Cusco/DRSC/RSCCE/DE, 27 November 2018. "Para mejor esclarecimiento; tenemos en manos los resultados del laboratorio de análisis físico - químicos de las aguas del sistema de tratamiento de aguas para consumo humano "Virgen de Chapi" Espinar. Está demostrado su exceso en parámetros de metales pesados (aluminio, arsénico, hierro y manganeso). Sobrepasan los límites máximos permisibles". ["To clarify; we have in our hands the results of the laboratory for the physical-chemical analysis of the waters of the 'Virgen de Chapi' Espinar water treatment system for human consumption. This shows that parametres are exceeded for heavy metal (aluminum, arsenic, iron and manganese). They exceed the maximum permissible limits".]

exposure and serious health complications. Health services at the three levels of prevention must have health professionals with knowledge and experience of exposure to metals and toxic substances.

ENSURE THE SUPPLY OF SAFE CLEAN WATER

Indigenous communities do not have sufficient and continuous access to safe clean water. Given the importance of safe clean water for health and quality of life, ensuring the provision of potable water for human consumption for all communities in Espinar is a matter of urgency.

IMPLEMENT A PUBLIC HEALTH STRATEGY TO ADDRESS THE HEALTH EMERGENCY IN ESPINAR URGENTLY

The pandemic has contributed to a further deterioration in the situation of vulnerability of the Indigenous communities of Espinar. As stated in the judgment of the compliance action, it is a matter of urgency that a health and environmental protection strategy be implemented that addresses the needs of a population that currently faces a double risk: that of metals and toxic substances and that of COVID-19.

In addition to the above, Amnesty International believes it is necessary to recall and emphasize that the strategy must be designed and implemented with the participation of the Indigenous communities of Espinar and their representative organizations and must also have a differentiated approach to gender and Indigenous identity, in accordance with international human rights standards, as detailed in the previous section. Furthermore, this strategy must be accompanied by an adequate budget for its implementation, identify the people and institutions responsible for the activities, establish specific deadlines and include indicators of compliance and monitoring by an autonomous body.

DAMAGE ASSESSMENT AND REPARATIONS PLAN

The evidence contained in this report also helps inform the damage assessment work to be carried out by the Multisectoral Commission charged with evaluating possible damage in the area of the Indigenous communities of Huano Huano, Huini Coroccohuayco, Pacopata, Alto Huancané, Huancané Bajo, Tintaya Marquiri, Alto Huarca, Cala Cala, Huarca, Suero y Cama, Huisa Ccollana, Huisa and Anta Ccollana in the province of Espinar, department of Cusco, and any necessary appropriate reparations plan.

Although they are parallel processes, the design of the Public Health and Environmental Strategy must be informed by the data contained in the damage assessment, likewise, the identification of those responsible for the damage is an essential part of the Multisectoral Commission process, not only to determine who is responsible for redressing them but also to make sure it does not happen again.

At this point, Amnesty International is concerned at the lack of results of the study into the cause of the presence of minerals in the bodies of water in Espinar[153] that was established in line with an agreement made during the 2012 roundtable dialogue in Espinar. To carry out the study, in 2015 the Environmental Assessment and Enforcement Agency (Organismo de Evaluación y Fiscalización Ambiental, OEFA) contracted the Peruvian Institute of Nuclear Energy (IPEN),[154] who to fulfil its contract should have submitted five reports (called deliverables) to the OEFA. However, the OEFA alleged that there has been a breach of contract by IPEN and terminated the contract, whereupon IPEN filed an arbitration claim against OEFA that is still ongoing. Thus, claiming that an arbitration process in progress, OEFA has classified the reports presented by IPEN as confidential until the arbitration ruling is issued at the end of the process.[155] Meanwhile, the communities have been waiting for the final results for almost a decade and information that is extremely useful for the damage assessment cannot be used or its contents known because it is confidential.

Unfortunately, organizations following the Multisectoral Commission process have indicated that the process has been delayed and that, despite the fact that the Commission's 180-day mandate has expired, to date no resolution has been issued to extend it. Therefore, since it lacks a legal instrument to safeguard it, its work could cease at any time despite having made a commitment to the communities to finish the work by May 2021.

Likewise, the organizations are concerned about the fact that the intention is to evaluate the damage in technical visits to two communities per day, ignoring the size and nature of each community. As Karem Luque

[153]El OEFA y el IPEN dan inicio a estudio que esclarecerá el origen de la presencia de minerales en cuerpos de agua en la provincia de Espinar [OEFA and IPEN begin study to clarify the source of the presence of minerals in bodies of water in the province of Espinar], press release, 24 April 2015. available at: https://www.oefa.gob.pe/el-oefa-y-el-ipen-dan-inicio-a-estudio-que-esclarecera-el-origen-de-la-presencia-de-minerales-en-cuerpos-de-agua-en-la-provincia-de-espinar/ocac06/ (last accessed 18 March 2021).

[154]El OEFA y el IPEN dan inicio a estudio que esclarecerá el origen de la presencia de minerales en cuerpos de agua en la provincia de Espinar [OEFA and IPEN begin study to clarify the source of the presence of minerals in bodies of water in the province of Espinar], press release, 24 April 2015. available at: https://www.oefa.gob.pe/el-oefa-y-el-ipen-dan-inicio-a-estudio-que-esclarecera-el-origen-de-la-presencia-de-minerales-en-cuerpos-de-agua-en-la-provincia-de-espinar/ocac06/ (last accessed 18 March 2021).

[155]Information provided in meeting between OEFA and Amnesty International, 23 October 2020.

of Derechos Humanos Sin Fronteras pointed out: “the evaluation of the damage claimed by the communities goes beyond the environmental monitoring of water, air or sediments, which is the only thing that is planned to be carried out in the technical visits between March and April. With this schedule it is impossible to arrive by May at a serious and comprehensive assessment of the damage to the communities” adding “the authorities are trying to ensure a quick fix by creating mechanisms, holding meetings and extending deadlines, but the results and public policies have not materialized, all to the detriment of the communities that continue to waiting for fewer words and more action.”[156]

Amnesty International reminds the authorities that they must carry out a participatory process that includes and listens to the communities and that is strengthened by the contributions of expert individuals and organizations, some of whom have been supporting the Indigenous communities of Espinar for decades. The state must take measures to ensure that the mistakes of the past are not repeated resulting in continuing violations of the rights of the communities.

The evidence presented shows that Peru has failed to protect the Indigenous communities of Espinar from the threat of COVID-19 in a context of exposure to metals and toxic substances. At the moment the state is at a crossroads in Espinar: either it is an example of responsibility and success in the design and implementation of a Public Health and Environmental Strategy and a comprehensive damage assessment, or it continues to be one more example of Peru’s failed state of health.

[156] “la evaluación de los daños que reclaman las comunidades va más allá del monitoreo ambiental de agua, aire o sedimentos, que es lo único que se planearía hacer en las visitas técnicas de marzo a abril. Con ese cronograma es imposible llegar a mayo con una evaluación seria e integral de los daños en las comunidades”... “las autoridades poner parches creando los mecanismos, realizando reuniones y extendiendo los plazos, pero no se materializan los resultados y las políticas públicas, todo en perjuicio de las comunidades que siguen esperando menos palabras y más acción.” Interview with Karem Luque, Derechos Humanos sin Fronteras biologist, 17 March 2021.

7. CONCLUSIONS AND RECOMMENDATIONS

This report presents independent and reliable scientific evidence that highlights and supports the need to design and implement an emergency public health and environmental strategy in Espinar.

Amnesty International found levels of metals and toxic substances in study participants pointing to the risk to health which the Indigenous communities in Espinar are exposed. For each of the metals and toxic substances analysed, there are between five and 88 people with levels higher than the study reference values. In addition, laboratory analyses yielded results of special concern in 16 people: 14 people with more than one metal above the reference values and two with significantly higher levels of one metal.

The failure to monitor the health of victims and to identify and treat long-term health risks has denied people a significant and vital aspect of their right to health. The inhabitants of Espinar have a right to know what long-term health problems can be caused by exposure to metals and toxic substances and how they can be treated.

People also have the right to know what is causing the contamination, how metals and toxic substances came to be in their bodies and what the mitigation and reparation plan is to ensure that this does not happen again.

There is ample scientific evidence on the harm that exposure to lead, arsenic, cadmium, mercury and manganese cause to health and, therefore, a comprehensive assessment of the harm caused to the health of Indigenous communities in Espinar by these metals must be undertaken and an Emergency Public Health Strategy must be designed and implemented without delay, otherwise these communities will continue to live in a **Failed state of health.**

Finally, Amnesty International also found that of the 191 water samples tested for total coliforms, 151 were positive. Of the 151 positive samples, 115 involved water used for human consumption, which means that the water is neither clean nor safe for such use. Community members in Espinar stated that, since they do not have access to other sources, they are forced to consume water from these sources.

Based on the evidence and analysis provided, Amnesty International makes the following recommendations to the Peruvian authorities:

1. With the full participation and in consultation with the 13 Indigenous communities in Espinar and their representative organizations, design and implement an Emergency Public and Environmental Health Strategy for Espinar that takes into account the evidence presented and the elements described in this report, including the finding and judgment of the Cusco Superior Court. The Strategy should have a differentiated approach as regards gender and Indigenous identity and allocate the appropriate human, physical and financial resources to carry out the activities necessary for implementation.
2. Ensure that any action implemented within the framework of the Public and Environmental Health Strategy complies with the state's obligations under international human rights standards. In particular:
    - Respect the rights to informed consent, confidentiality, privacy of health information and the principles of participation and consultation.
    - Ensure that people undergoing laboratory tests understand why they are being tested and how their test results will be used, and that they are given test results promptly.

- Ensure that all information is provided in a timely, accessible and understandable manner in Spanish and Quechua.

3. Ensure that accessible, affordable and quality health services are available to address any specific health problems faced by people exposed to metals and toxic substances. This includes:
    - Ensuring the availability of health professionals trained to diagnose and treat health conditions related to exposure to metals and toxic substances, as well as the necessary medicines and equipment to treat any symptoms and health conditions.
    - Disseminating information about possible symptoms, available treatment and possible preventive actions - including those involving preventive medical care (such as health screening) - that people can undertake before symptoms begin to appear and ensure the availability of appropriate preventive care.
4. Finalize and publicly present the results of the causality study on the presence of metals and toxic substances found in Espinar's water commissioned from IPEN. These results should be shared with the Indigenous communities in Espinar in an accessible format.
5. Guarantee that the Indigenous communities in Espinar have access to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic use, and adequate sanitation.
6. Carry out, with the participation of the communities, a comprehensive damage assessment study that identifies those responsible for the damage and, if applicable, design a reparations plan in line with international standards.
7. Provide all the necessary resources to ensure that the Law to Strengthen Prevention, Mitigation and Health Care for those Affected by Contamination with Heavy Metals and other Chemical Substances is properly implemented.

ANNEX I: REFERENCE VALUES

The following table describes the reference values used for this study. These values include the reference values found in Peruvian regulations and the values used in the United States and the European Union that reflect the most recent evidence of health risks due to exposure to metals and toxic substances:

LEAD IN BLOOD	
1.8 µG/DL	Quantification limit: This means that the laboratory cannot detect or measure less than 1.8 micrograms of lead per decilitre of blood.
5 µG/DL	Reference value for children and adults in the United States and the European Union
10 µG/DL	Reference value for children and pregnant women in Peru. (MINSA RM 400-2017)
20 µG/DL	Reference value for adults not subject to occupational exposure in Peru. (MINSA RM 400-2017).
CADMIUM IN URINE	
0.7 µG/L	Quantification limit: This means that the laboratory cannot detect or measure less than 0.7 micrograms of cadmium per litre of urine.
1 µG/L	Reference values of the European Union and Peru (MINSA RM 757-2013)
ARSENIC IN URINE	
5.0 µG/L	Quantification limit: This means that the laboratory cannot detect or measure less than 5.0 micrograms of arsenic per litre of urine.
15 µG/L	European Union reference value
50 µG/L	Reference value for people not subject to occupational exposure in Peru (MINSA RM 389-2011).
MERCURY IN URINE	
3.6 µG/L	Quantification limit: This means that the laboratory cannot detect or measure less than 3.6 micrograms of mercury per litre of urine.
1 µG/L	Reference value of the European Union.
<5 µg/L	Reference value for people not subject to occupational exposure (non-smokers) in Peru (MINSA RM 757-2013).

MANGANESE IN BLOOD	
15 µG/L	Quantification limit: This means that the laboratory cannot detect or measure less than 15 micrograms of manganese per litre of blood.
15 µG/L	United States reference value.
--	Peru has no reference value for manganese.
MANGANESE IN URINE	
2 µG/L	Quantification limit: This means that the laboratory cannot detect or measure less than 2 micrograms of manganese per litre of urine.
2.9 µG/L	United States reference value.
--	Peru has no reference value for manganese.

ANNEX II: SIGNIFICANT RESULTS

7 PARTICIPANTS HAD VALUES EQUAL TO OR GREATER THAN THE REFERENCE VALUE OF 5 µG/DL OF LEAD IN THEIR BLOOD

NUMBER	CODE	GENDER	AGE	RESULT
1	050 HU	M	56	8.5
2	062 HU	M	70	5.0
3	118 TM	M	64	5.1
4	147 TM	M	50	5.6
5	007 HU	F	50	5.3
6	025 HC	F	52	11.5
7	051 HC	F	50	12.2

19 PARTICIPANTS HAD VALUES EQUAL TO OR GREATER THAN THE REFERENCE VALUE OF 1 µG/L OF CADMIUM IN THEIR URINE

NUMBER	CODE	GENDER	AGE	RESULT
1	015 AE	M	47	1.6
2	016AE	F	47	1.2
3	037TM	M	61	1.9
4	045BE	F	59	3.3
5	077TM	F	48	1.0
6	088TM	F	57	3.2
7	105TM	F	28	1.4
8	136TM	F	33	1.4
9	151HU	M	55	1.6
10	021AE	F	42	1.0
11	107TM	F	87	1.6
12	109PA	M	30	5.4
13	112TM	M	38	2.1
14	115HU	F	65	1.5
15	120TM	M	30	1.5
16	121TM	F	36	1.2
17	123TM	F	50	2.6
18	135TM	M	12	1.4
19	140TM	F	58	3.3

88 PARTICIPANTS HAD VALUES EQUAL TO OR GREATER THAN THE REFERENCE VALUE OF 15 µG/L OF ARSENIC IN THEIR URINE

NUMBER	CODE	GENDER	AGE	RESULT
1	003 HC	F	48	43.3
2	005 HC	M	64	71.6
3	006 HU	F	47	27.6
4	008 BE	M	68	48.5
5	011 HU	M	40	65.8
6	012 BE	F	31	28.3
7	014 TM	F	53	17.2
8	016 AE	F	47	29.3
9	017 BE	F	62	141.4
10	018 BE	M	64	167.8
11	020 AE	F	37	18.7
12	022 BE	F	42	46.4
13	023 AE	F	75	58.5
14	024 TM	F	34	29.0
15	028 AH	M	63	34.6
16	029 AH	M	58	43.9
17	031 HU	F	53	54.7
18	034 BE	M	54	27.6
19	039 AH	F	49	18.9
20	040 AH	F	51	32.0
21	044 BE	F	29	15.3
22	045 BE	F	59	59.1
23	050 HU	M	56	29.3
24	053 BE	F	52	34.6
25	055 TM	F	24	21.2
26	060 HU	F	42	26.0
27	064 HC	F	58	30.5
28	065 HA	M	47	17.8
29	066 BE	F	63	43.3
30	067 AE	M	15	25.7
31	068 AE	F	46	32.1
32	070 HU	F	19	66.2
33	071 TM	M	48	22.2
34	075 BE	F	60	62.7
35	077 TM	F	48	45.7
36	078 TM	F	21	47.3
37	081 BE	F	42	31.2
38	082 BE	F	63	59.1
39	084 TM	M	40	27.7
40	085 HU	F	41	15.7

41	092 TM	M	64	15.8
42	101 HU	M	49	37.4
43	105 TM	F	28	32.6
44	108 TM	F	33	20.4
45	116 HA	F	69	17.7
46	134 PA	M	51	15.0
47	141 TM	F	16	23.1
48	145 AH	F	36	32.1
49	146 TM	M	48	35.6
50	147 TM	M	50	21.5
51	149 TM	F	16	21.4
52	151 HU	M	55	25.0
53	152 HU	F	50	20.9
54	154 TM	F	54	32.6
55	004 HC	M	50	43.4
56	007 HU	F	50	48.2
57	009 BE	F	66	20.7
58	010 BE	M	37	31.9
59	019 AE	F	18	18.6
60	021 AE	F	42	34.0
61	025 HC	F	52	26.2
62	026 HC	F	48	33.2
63	030 BE	M	56	17.9
64	033 TM	F	60	26.2
65	038 TM	F	46	17.6
66	042 TM	F	42	36.3
67	048 TM	M	64	22.4
68	032 BE	M	64	76.6
69	051 HC	F	50	18.8
70	063 BE	F	26	17.3
71	069 HU	F	25	45.5
72	076 TM	F	50	41.9
73	079 TM	M	25	21.0
74	080 AE	M	20	91.4
75	083 BE	M	60	34.5
76	091 TM	F	61	25.9
77	100 HU	F	43	51.4
78	102 TM	M	54	23.5
79	103 TM	M	32	25.2
80	104 TM	F	28	45.9
81	106 TM	F	33	65.6

82	107 TM	F	87	31.4
83	109 PA	M	30	69.8
84	115 HU	F	65	17.2
85	122 TM	M	29	56.3
86	148 TM	F	49	26.1
87	150 AE	F	58	18.9
88	153 TM	F	40	32.5

17 PARTICIPANTS HAD VALUES GREATER THAN THE REFERENCE VALUE OF 50 µG/L OF ARSENIC IN THEIR URINE

NUMBER	CODE	GENDER	AGE	RESULT
1	005 HC	M	64	71.6
2	011 HU	M	40	65.8
3	017 BE	F	62	141.4
4	018 BE	M	64	167.8
5	023 AE	F	75	58.5
6	031 HU	F	53	54.7
7	045 BE	F	59	59.1
8	070 HU	F	19	66.2
9	075 BE	F	60	62.7
10	082 BE	F	63	59.1
11	032 BE	M	64	76.6
12	080 AE	M	20	91.4
13	100 HU	F	43	51.4
14	103 TM	M	32	252.2
15	106 TM	F	33	65.6
16	109 PA	M	30	69.8
17	122 TM	M	29	56.3

5 PARTICIPANTS HAD VALUES EQUAL TO OR GREATER THAN THE REFERENCE VALUE OF 5 µG/L OF MERCURY IN URINE

NUMBER	CODE	GENDER	AGE	RESULT
1	070HU	F	19	6.4
2	075BE	F	60	7.1
3	109PA	M	30	5.1
4	119TM	F	63	6.4
5	121TM	F	36	6.5

38 PARTICIPANTS HAD VALUES GREATER THAN THE REFERENCE VALUE OF 15 µG/L OF MANGANESE IN THE BLOOD

NUMBER	CODE	GENDER	AGE	RESULT
1	012 BE	F	31	18.9
2	024 TM	F	34	18.6
3	037 TM	M	61	16.9
4	045 BE	F	59	18.5
5	077 TM	F	48	16.8
6	092 TM	M	64	20.0
7	093 TM	F	31	17.5
8	096 TM	F	25	16.8
9	110 HU	F	10	17.7
10	111 TM	M	2	16.8
11	108 TM	F	33	19.1
12	116 HA	F	69	18.1
13	126 TM	M	52	16.4
14	132 HU	F	56	15.5
15	133 HU	M	13	17.9
16	134 PA	M	51	16.4
17	138 TM	F	75	18.3
18	139 TM	F	55	18.4
19	141 TM	F	16	15.7
20	154 TM	F	54	17.8
21	026 HC	F	48	18.3
22	051 HC	F	50	16.6
23	080 AE	M	20	16.3
24	102 TM	M	54	26.6
25	104 TM	F	28	16.4
26	115 HU	F	65	15.6
27	117 HU	M	55	15.2
28	119 TM	F	63	15.9
29	120 TM	M	30	17.1
30	122 TM	M	29	15.6
31	123 TM	F	50	15.9
32	124 HA	F	47	19.9
33	135 TM	M	12	16.3
34	137 TM	F	12	17.6
35	142 TM	F	35	15.4
36	148 TM	F	49	16.3
37	150 AE	F	58	16.4
38	153 TM	F	40	19.0

6 PARTICIPANTS HAD VALUES GREATER THAN THE REFERENCE VALUE OF 2.9 G/L OF MANGANESE IN THEIR URINE

NUMBER	CODE	GENDER	AGE	RESULT
1	017 BE	F	62	3.4
2	151 HU	M	55	5.0
3	027 HC	M	40	21.8
4	033 TM	F	60	3.3
5	051 HC	F	50	10.1
6	140 TM	F	58	21.7

LABORATORY TESTS YIELDED RESULTS OF PARTICULAR CONCERN IN 16 PEOPLE: 14 PEOPLE HAD MORE THAN ONE METAL ABOVE THE REFERENCE VALUE AND TWO HAD SIGNIFICANTLY HIGHER LEVELS OF ONE METAL.

NO.	CODE	GENDER	AGE	PB[157]	CD[158]	AS[159]	HG[160]	MN BLOOD	MN URINE
1	051 HC	F	50	12.2	<0.7	18.8	<3.6	16.6	10.1
2	037 TM	M	61	3.2	1.9	10.8	<3.6	16.9	<2.0
3	045 BE	F	59	4.5	3.3	59.1	<3.6	18.5	<2.0
4	077 TM	F	48	4.1	1.0	45.7	<3.6	16.8	<2.0
5	151 HU	M	55	1.8	1.6	25.0	<3.6	<15.0	5.0
6	109 PA	M	30	2.1	5.4	69.8	5.1	<15.0	<2.0
7	120 TM	M	30	2.3	1.5	6.4	<3.6	17.1	<2.0
8	123 TM	F	50	1.9	2.6	10.1	<3.6	15.9	<2.0
9	135 TM	M	12	1.8	1.4	<5.0	<3.6	16.3	<2.0
10	140 TM	F	58	3.9	3.3	8.4	<3.6	<15.0	21.7
11	122 TM	M	29	3.0	<0.7	56.3	<3.6	15.6	<2.0
12	121 TM	F	36	2.8	1.2	11.7	6.5	<15.0	<2.0
13	080 AE	M	20	2.9	<0.7	91.4	<3.6	16.3	<2.0
14	025 HC	F	52	11.5	<0.7	26.2	<3.6	<15.0	<2.0
15	017 BE	F	62	2.7	0.9	141.4	<3.6	<15.0	3.4
16	018 BE	M	64	3.8	<0.7	167.8	<3.6	<15.0	<2.0

[157] Pb = Lead
[158] Cd = Cadmium
[159] As = Arsenic
[160] Hg = Mercury

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CONTACT US


info@amnesty.org


+44 (0)20 7413 5500

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FAILED STATE OF HEALTH

HEALTH EMERGENCY IN INDIGENOUS PEOPLES OF ESPINAR, PERU

Amnesty International carried out a desk and field research in 11 Indigenous communities in Espinar, including tests for metals and toxic substances in 150 people and water quality. The organization found levels of metals and toxic substances in study participants that reveal the health risks to which Indigenous communities are exposed and which must be addressed as an emergency. In addition, 115 samples of water used for human consumption tested for total coliform were found to be positive, which means that the water is not clean and safe.

On 30 December 2020, the Cusco Superior Court issued a final judgment, which cannot be appealed, ordering the Ministry of Health to design and implement a Public Health Strategy for the Health Emergency in Espinar. The ruling is an important first step in creating an emergency public health and environmental strategy for Espinar, which must be formulated in accordance with Peru's obligations under international human rights law.

Espinar is at a crossroads: either it is an example of responsibility and success in the design and implementation of a Public and Environmental Health Strategy and a comprehensive damage assessment, or it continues to be one more example of Peru's Failed state of health.

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