

# AWARENESS-RAISING STRATEGIES TO AVOID THE USE OF MERCURY IN ARTISANAL AND SMALL-SCALE GOLD MINING



## **Awareness-raising strategies to avoid the use of mercury in artisanal and small-scale gold mining**

United Nations Development Programme  
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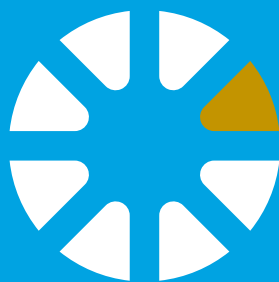
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## 1.

# Introduction

The planetGOLD Peru project, as part of its component 4, has in its design a goal of raising awareness of the dangers of mercury and ways to reduce its use in artisanal and small-scale gold mining (hereafter ASM) among 19 000 people (5 000 women and 14 000 men) in the regions of Arequipa, Piura and Puno.

This document systematizes and analyses, in summary form, the awareness-raising activities organized by the project between 2020 and 2024. The objective was to analyze and document lessons learned and strategies to improve future initiatives related to awareness raising in villages where the artisanal mining and small-scale gold mining is practiced.

First, the document summarizes the results of the diagnosis carried out at the end of 2020, which presents relevant data on media preference, perceptions about mercury and socio-demographic data of the mining population in Arequipa, Piura and Puno that helped refine the Awareness Plan, described in summary form. Then, it details the awareness strategies developed with each actor in the following years until the closing of the project, and ends with the results and lessons learned from the experience.

## 2.

# Sensitization diagnosis

## 2.1. Scope and methodology

The first stage of the awareness process was the diagnosis, accomplished between December 2020 and February 2021, by the CAP study methodology. Through this methodology, a baseline was obtained on the level of knowledge, attitudes and practices regarding the use of mercury in ASM in the areas of intervention of the planetGOLD Peru project.

The diagnosis sought to substantiate the communication needs and demands of the stakeholders involved in the project, as well as to demonstrate the findings of the social behavior regarding the use of mercury in ASM, in order to achieve the formulation of the Awareness Plan in terms of efficiency, opportunity and pertinence in the local areas of intervention of the project, such as Puno, Piura and Arequipa.

Sample by region	Arequipa	Piura	Puno
	Huanuhuanu y Chaparra	Suyo, Sapillica, Paimas	Ananea
Quantitative: 316 interviewed people	105	106	105
Qualitative	53 in depth interviews 3 focus groups		

### Methodological criteria

The methodology of general matrix was based on the contributions of communication for sustainable territorial development, so it incorporated gender, multi-stakeholder and active citizenship approaches into each of the tools employed. The methodological criteria that guided the study were:

- Motivation for active and proactive participation of stakeholders.
- Appreciation of cultural and communicative richness of the local population.
- Dialogue and approach to life stories of figures -men and women- who has credibility and become community or local opinion leaders.
- Emphasis on inquiry into the characteristics of women's participation and their budding leadership profiles.
- Incorporation of rural communicators, local journalists and cultural agents in the list of actors for the application of the CAP study.
- Interest in knowing the future expectations and imaginaries of development of a representative sample of the population, divided by gender, age and educational level in the four intervention localities.
- Motivation to strengthen the articulated and joint work between local authorities and ASM actors.
- Prospective research of the Awareness Plan, involving ASM stakeholders.



## Methodological path

For the collection of information from secondary sources, it was considering the review, analysis and systematization of documents and publications related to ASM and other initiatives related to the sector were considered. Additionally, the study design was validated through interviews with specialists in the sector.

Concerning the collection of primary information from CAP diagnostic, it was defined 4 principal thematic lines and a matrix with the different tools to apply during the field work.

1. Leaderships for ASM development: leaderships profiles and emergent leaders with emphasis on women and youth.
2. Reduction or elimination of the use of mercury in ASM: positions and arguments; good practices or reference experiences; initiatives and suggestions.
3. Conflicts and unresolved demands around ASM, with emphasis on the use of mercury.
4. Access to and participation in media and communication spaces.

Tool	Objective	Description of participants
<b>Field observation</b>	Initiate fieldwork by recording scenes of social behavior in mining and housing areas.	Population of the mining environment in the daily living spaces and in the ASM activity sites in each of the four intervention districts.
<b>In Depth interviews and collection of testimonies</b>	Collect and analyze trends in the perceptions and opinions of influential actors regarding the topics of the KAP study. There will be the possibility to ask open questions and capture life stories linked to ASM, mercury use, as well as their possible commitments to the reduction and elimination of this substance.	Woman and man leaders, representatives or key actors of ASM and local authorities.
		Regional authorities and officials, representatives of public and private institutions specialized in ASM.
		Communicators or local journalists.
<b>Focus groups with an emphasis on conflict research</b>	Collect and systematize the opinions, positions and arguments of local leaders regarding the reduction or elimination of mercury in ASM activities, in such a way that they share their practical experiences on the subject and link them to their life stories of opinion leadership, media and political or public advocacy with the population and entities involved.	6 mixed focus groups, composed by ASM man and woman leaders, representatives or key actors and local authorities.

Tool	Objective	Description of participants
<b>Focus groups with an emphasis on conflict research</b>	To evidence the proposals and initiatives for sustainable local development -specially to reverse the gaps in health, education and employment- formulated by women; through the evaluation of their current profiles and expectations of opinion and media leadership with the objective of strengthening their public and political advocacy and advocacy skills.	6 focus groups only for women who did not participate in the mixed focus group and were ASM leaders, representatives or key actors, and local authorities.
<b>Quick and flash survey (opinion poll)</b>	To gather trends in the opinions, preferences, expectations and needs of the common population, with respect to the four main topics of the KAP study: use of mercury in ASM activity, media consumption and management of public information related to ASM, relevant opinion leaders, and imaginaries and demands of local development.	Heterogenous sample of the mining and non-mining population.




During the primary information gathering process, the qualitative tools of the KAP diagnosis (interviews and focus groups) were used to investigate the viability of strategies to the Awareness Plan. This was done to gather the preferences and suggestions of local stakeholders and to be able to adjust them to the local reality of each region.

The strategies that were submitted under validation were:

1. Training of communication leaders.
2. Motivational campaign for the reduction of the mercury use in ASM.
3. Internships and exchange of best practices.
4. Campaign to motivate commitments for the elimination of mercury use in ASM.
5. Public forums for dialogue on the reduction or elimination of mercury in ASM
6. Public and politic incidence Plan for reduction or elimination of mercury in the ASM.

## 2.2. Results

### Leaderships for ASM development: leaderships profiles and emerging leaders with an emphasis on women and youth

		
Puno	Arequipa	Piura
<p>The emergence of new women's leaderships linked to ASM activities that express initiatives and demands for environmental management is evident.</p> <p>In this way, it is possible to appreciate, in the representative women of the ASM activities, a potential leadership profile for the cultivation and strengthening of communication skills.</p> <p>A generation of managers and directors of the various formalized mining organizations, and those in the process of becoming formalized, are also showing renewed leadership.</p>	<p>Limited presence of women leaders in small-scale and artisanal mining committed to seeking development opportunities and caring for the environment and health.</p> <p>These leaders have a vocation for communicative leadership, the ability to express ideas and an explicit interest in being spokespersons for campaigns in favor of reducing the use of mercury and environmental care.</p> <p>Formalization and modernization of ASMs is largely driven by established leaders (managers and representatives of the ASM itself).</p> <p>It can be seen that their approach to environmental management in ASM obeys mainly to a business strategy and economic purposes.</p> <p>There is a large participation of young people in artisanal mining as labor force.</p>	<p>Women's participation in small-scale mining and artisanal mining is largely invisible in the Piura region.</p> <p>Their participation in decision-making spaces and leadership positions in the mining activity is very limited, so there are still significant gaps for the effective exercise of their rights.</p> <p>In contrast, there is evidence of leadership committed to formalization, social responsibility and the contribution to local development in ASM, based on formalization processes or already formalized in the districts of Paimas and Suyo.</p>



## Reduction or elimination of mercury use in ASM: position and arguments; good practices or referential experiences; initiatives and suggestions

Puno	Arequipa	Piura
<p>The negative impact on the management and environmental health of the Ananea district caused by the use of mercury in ASM activities, in addition to other contaminating factors, is recognized, which confirms the impact on the Ramis river basin.</p> <p>Most interviewees believe that ecological crimes have been committed, such as the dumping of effluents from illegal mining operations in the Ramis River watershed.</p> <p>On the other hand, the legitimate interests expressed by the managers and directors of formalized ASM, regarding the advantages of the total elimination of the use of mercury in the ASM production process, with the purpose of exporting ECOLOGICAL GOLD, stand out.</p> <p>Interest in presenting scientific evidence that proves the impact of mercury on the local population, through environmental and health monitoring reports.</p>	<p>It is recognized that the use of mercury affects people's health, but its urgency is not perceived because the negative impacts are not very visible and long term.</p> <p>Because mercury use is ingrained in the way miners work, in many cases for a generation, there is a greater willingness to reduce mercury use than to eliminate it in ASMs.</p> <p>In this regard, ASM managers have shown interest in reducing mercury use and implementing cleaner technologies, to the extent that these contribute to improving economic income and provide them with competitive advantages. However, there are critical aspects that must be addressed beforehand, such as obtaining an exploitation contract or assignment of use that will give them peace of mind to make investments and plan for the medium term.</p>	<p>The negative impacts of mercury use on the environment are recognized, especially in the contamination of water sources, which affects crops and water resources for human consumption.</p> <p>Artisanal mining has been developed in the prioritized districts for several decades, so certain imaginaries are rooted in the mentality of the mining populations, such as the fact that mercury is the best and only option to process the mineral; or the apparent harmlessness of this element because some miners handle it without protective equipment or care, and, despite this, nothing happens to them.</p> <p>At the ASM level, there is no perceived urgency to implement actions to reduce the use of mercury, since it is a type of mining that mainly involves the exploitation, extraction and sale of the 'raw' resource.</p>
<p>Good practices for the reduction of mercury use identified: Adoption of the gravimetric table and use of the retort for gold recovery.</p>	<p>Good practices for the reduction of mercury use identified: Replacement of the quimbaleta by the Chilean mill.</p> <p>Closed ore processing process: ore concentration, amalgamation in drums and mercury recovery by retorts.</p> <p>Pre-concentration of the ore prior to amalgamation, resulting in less use of mercury or gravimetric technologies.</p>	<p>At the regional level, interdiction operations carried out by the authorities and the consequent destruction of informal mining machinery have had an impact on the reduction of mercury use, as there are fewer options for its processing.</p>

## Conflicts and unresolved demands related to ASM, with emphasis on mercury use

Puno	Arequipa	Piura
<p>Non-visible conflict due to the perceived contamination of the upper Ramis River basin by illegal and informal miners.</p> <p>Conflict of ASMs regarding their demands for technical assistance and financial support to adapt to the State's policy to reduce the use of mercury in gold production processes.</p> <p>Conflict in access to the formal purchase of mercury by formalized mining organizations or those in the process of formalization.</p>	<p>Regular conflicts in Chaparra due to disputes over the occupation of land for mining.</p> <p>Latent conflicts in Chaparra due to the perception of river contamination by farmers who have their crops near mining areas.</p> <p>Conflicts between miners and mining concession holders due to abusive clauses in mining contracts (high royalties).</p> <p>Unresolved demand: complex, bureaucratic formalization, with slow processes, and changes in formalization regulations, which vary according to the governments in charge.</p>	<p>Latent conflict within the communities of Suño, between those involved in mining activities and the agricultural and livestock sector.</p> <p>The mining consortium ATE is interested in intervening Sapiñlica, so it needs to have a social license from the community.</p> <p>It is reported that the indiscriminate use of mercury in mining activities generates losses in agro-export products in Tambo Grande.</p>

## Access to and participation in media and communication spaces

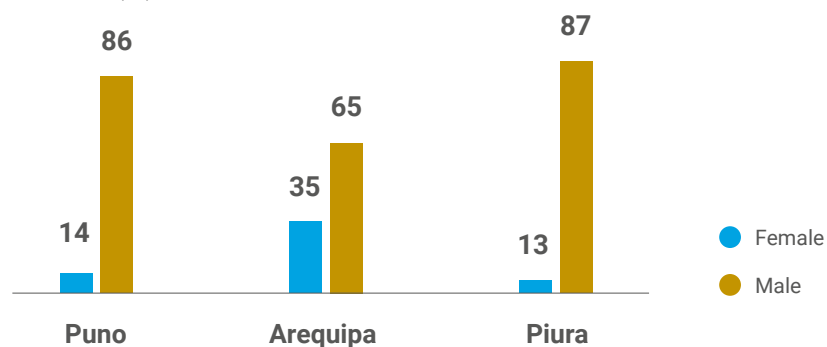
Puno	Arequipa	Piura
<p>Most of the workers in the mining camps visited come from other regions, do not have a cultural identity of Ananea and are not informed about news from the district.</p> <p>Among the mine workers, the use of digital media (mainly WhatsApp and Facebook) stands out in order to be informed about national events.</p>	<p>The fact that there are no local media outlets that address the sector's problems is questioned, although neighboring radio stations (in the district of Chala) sometimes provide coverage. In the case of the national media, the negative stigmatization of artisanal mining is rejected. The most popular media outlets are open signal television channels, mainly news programs.</p>	<p>Suño is a poorly connected district. In this sense, coordination and information exchange are done through telephone calls. The megaphone is also still used to provide information at the local level. As for the radio, radio Cutivalú is listened to, which sometimes addresses mining issues, but from a critical approach to the activity; and radio Stereo 9. The lack of signal near mining operations prevents the use of WhatsApp and social networks. Even so, municipal authorities highlight the use of institutional Facebook.</p>

Puno	Arequipa	Piura
<p>In addition, the population has a varied consumption of news programs, both regional and national coverage. One of the news programs they identify with is the radio station Onda Minera, which mainly announces news from La Rinconada and the surrounding districts, mainly about ASM and local news.</p> <p>100 % of the people surveyed are interested in receiving information on the reduction and elimination of mercury through demonstration videos in the first place, followed by brochures and face-to-face training.</p>	<p>Chaparra receives the signal of Radio Programas del Perú (hereinafter RPP) and some local radio stations (radio Alegría, radio Yaraví, radio Frecuencia popular Chala, radio Chaparral, radio Melodía and radio Victoria). In terms of television channels, CHALA TV stands out, which also broadcasts live on Facebook.</p> <p>It is recognized that some media provide coverage of mining issues, in the same way that posters, flyers and radio spots are valued as vehicles for information. Along these lines, WhatsApp is an important medium for sharing information. Likewise, open signal television channels are well received, although the ASM issue is practically invisible in their programming.</p> <p>More than 95 % of the population is interested in receiving information on mercury reduction and elimination, mainly through demonstration videos, as well as from explanatory brochures and radio.</p> <p>Seventy-eight percent of the interviewees would join the campaign to reduce mercury. Their main motivation is to promote good practices and alternatives to limit the use of mercury.</p>	<p>In Sapillica, people follow the programming of the open signal channels and listen to RPP; however, locally, information is valued in the form of pamphlets. Similarly, there is a local radio station called Las Lomas, also known as La Ruta radio. However, it is difficult to share information because the cell phone signal is very weak. There is a negative view of mining, as the region is generally perceived as agricultural.</p> <p>More than 95 % of the people surveyed expressed interest in receiving information on the reduction and elimination of mercury, especially through demonstration videos. Next in preference are explanatory brochures, talks, training and workshops.</p> <p>94 % of those interviewed in Piura would join the campaign to reduce mercury. Their main motivation is the promotion of good practices in the sector, so they recommend a multi-stakeholder approach.</p>

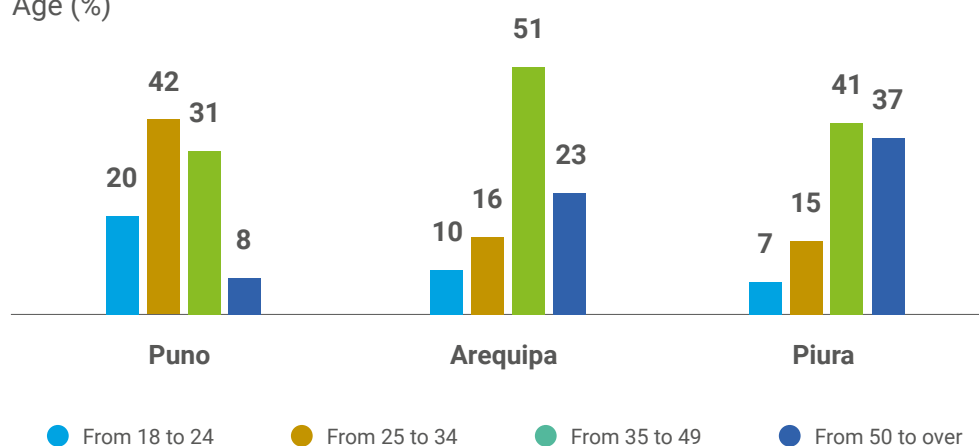
## Summary of survey results

### Demographic characteristics of people surveyed

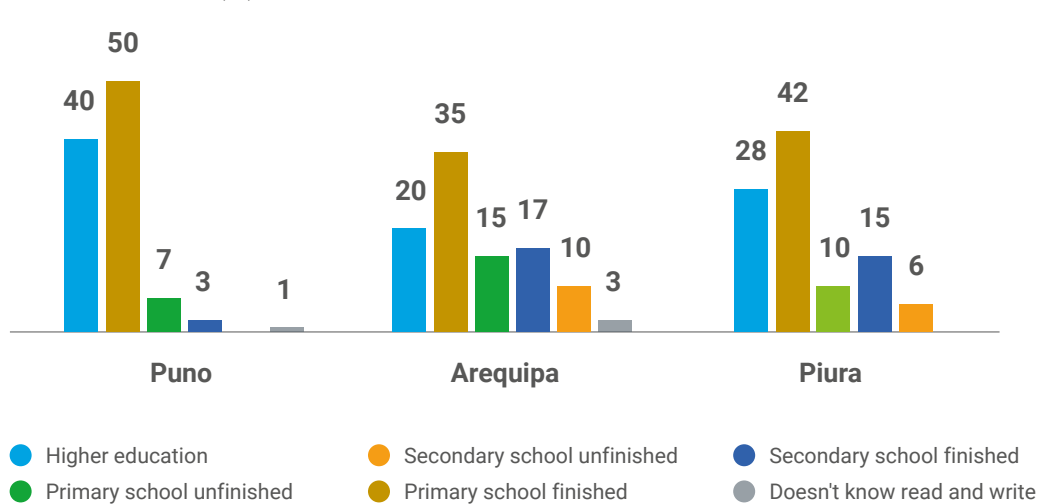
Gender (%)



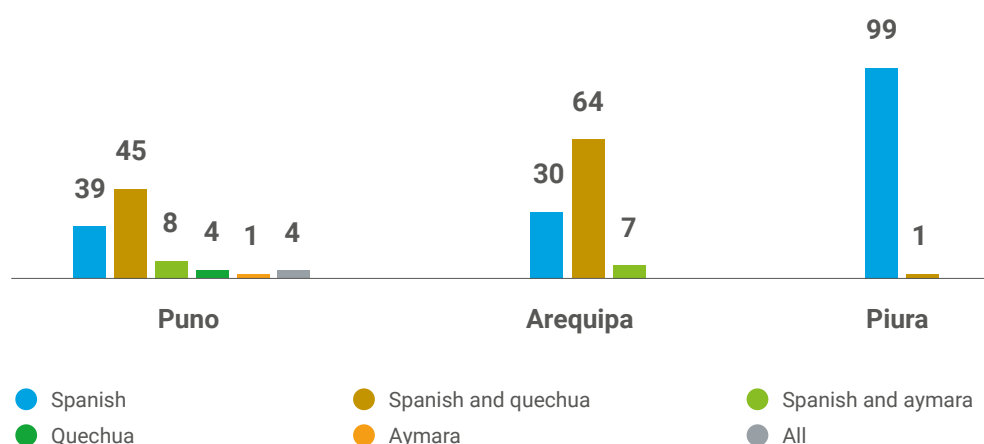
Age (%)



Education level (%)

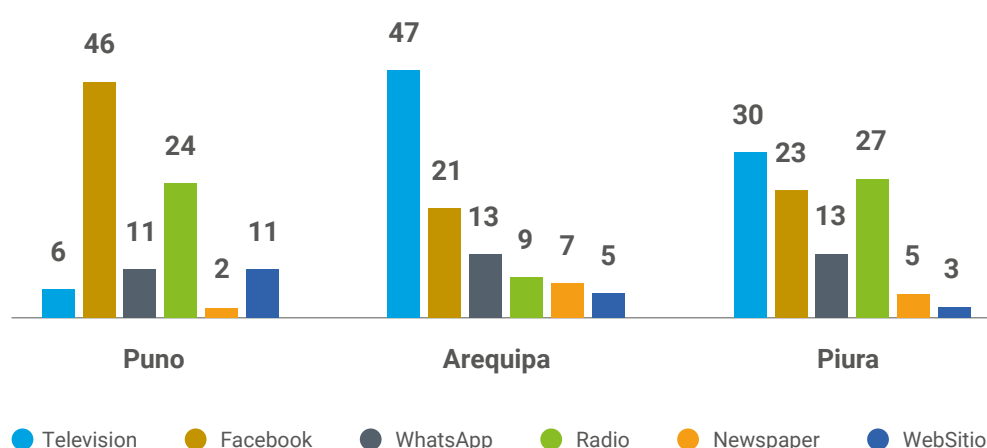


## Regular use of language (%)



## Media communication

## Use of communication media (%)

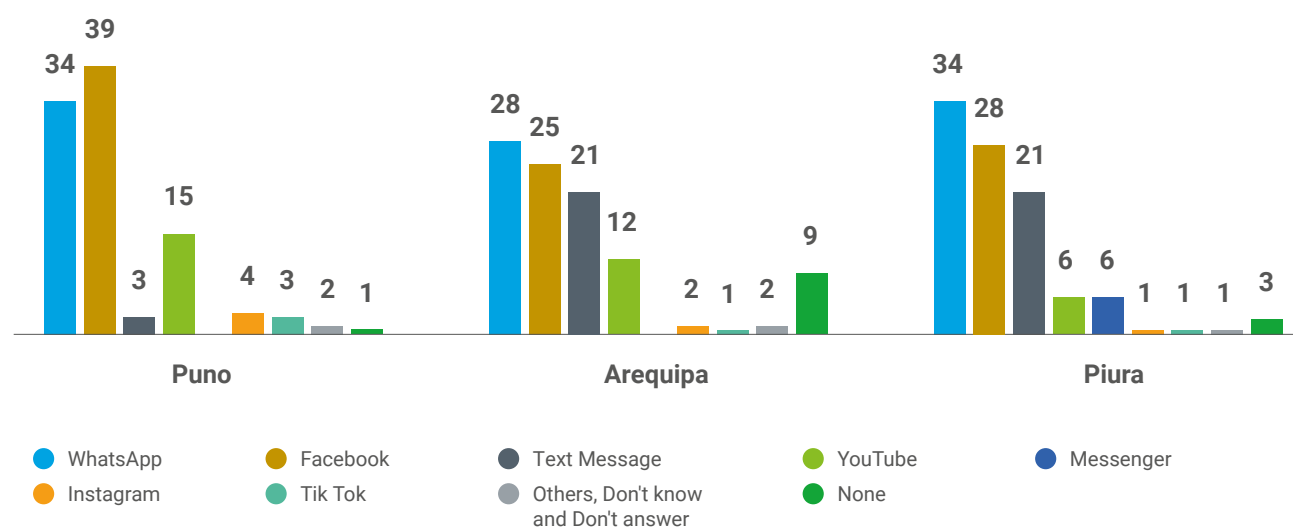


In Puno, the majority of the surveyed population, i.e. 46 %, reveals that they prefer to consume daily news through Facebook; followed by 24 % who are informed daily through radio programs. Likewise, within the news programming most consumed by those surveyed, 62 % say that these media have never addressed the issue of mercury.

In Arequipa, 46.5 % of the people surveyed prefer to get their information from television. However, the second most preferred media is Facebook (in Huanuhuanu) and radio (in Chaparra). It should be noted that the media with the highest consumption in both districts have never addressed the use of mercury in the district (50 %). Only 30 % of these media explain the consequences of its use and only 14,4 % report it.

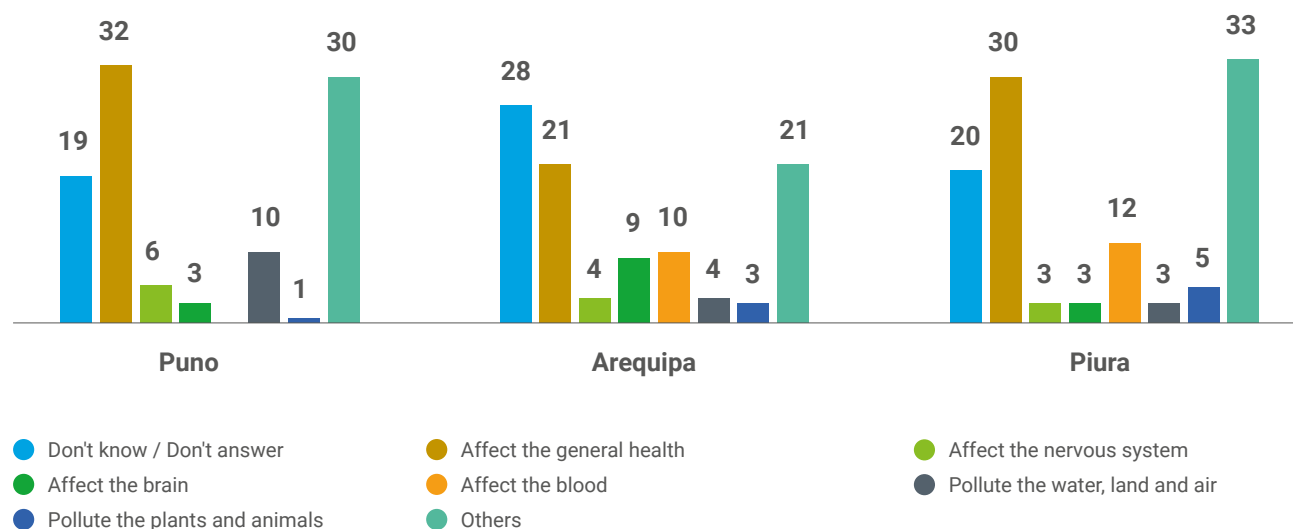
In Piura, 29,7 % of those surveyed stated that they get their information from television, 27 % from radio and 23 % from Facebook. In this regard, the most watched channel is América TV (13,5 %) and the most tuned radio media is RPP (22,9 %). Among provincial radio stations, radio Cutivalú stands out (5,2 %). Regarding the topics covered by the most popular media, it should be noted that they do not report on the use of mercury (53,9 %). The most classic approach to this input has to do with the consequences it generates (23,7 %) and with complaints (19,7 %).

#### Use of digital media (%)



#### Perceptions and actions facing to the mercury exposition

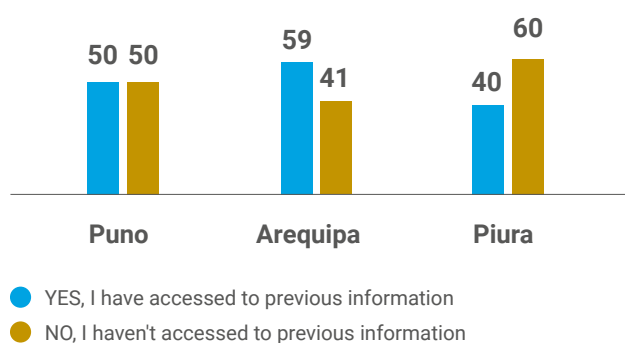
##### Perception of risks about mercury (%)



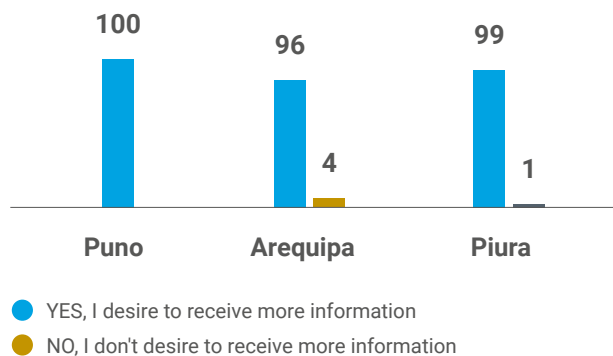


## Participation and interest on information

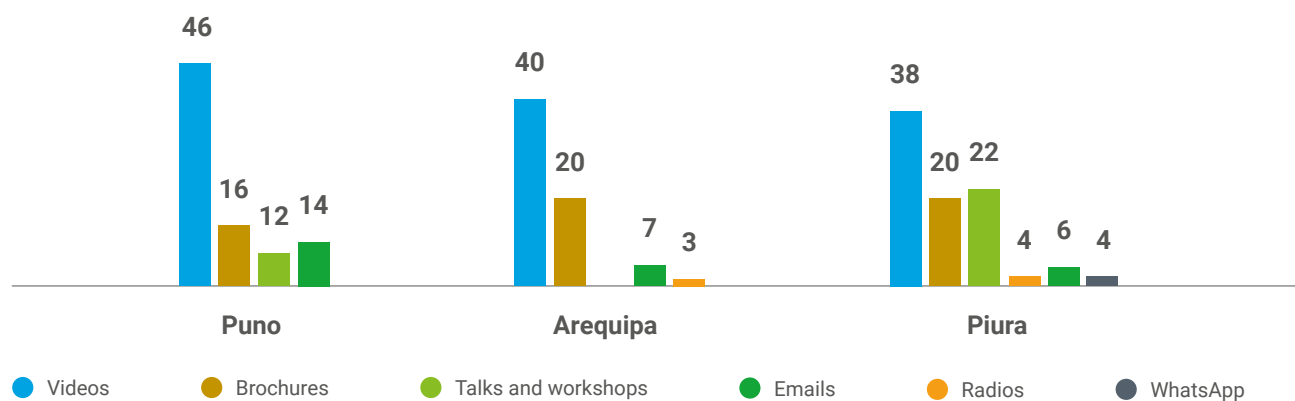
Previous information about the dangers of mercury and ways to minimize his use (%)



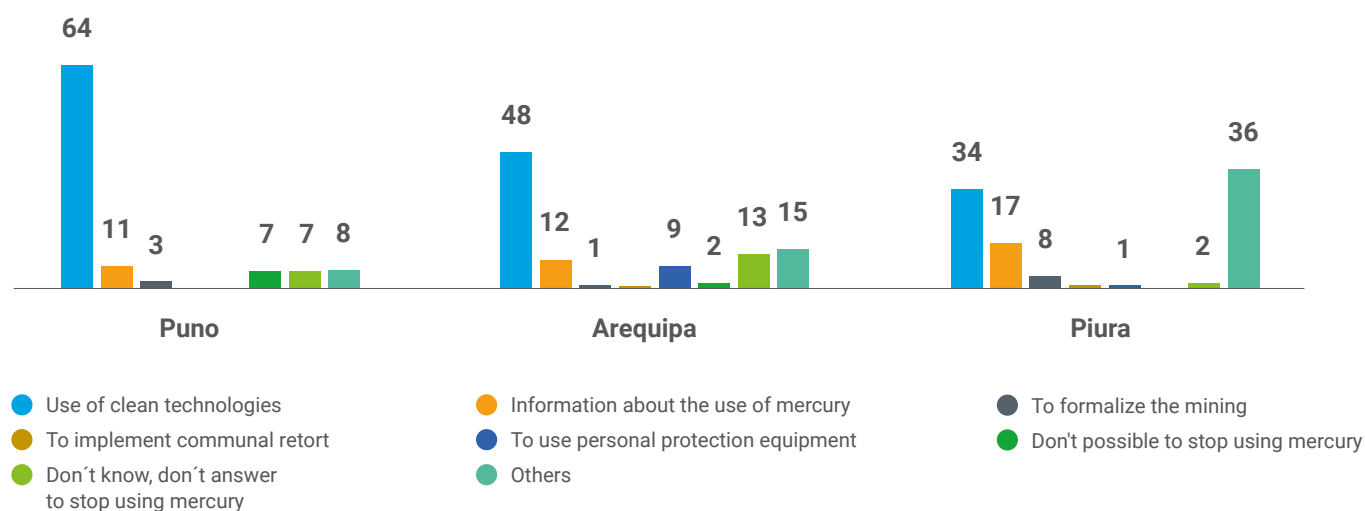
Interest in receive more information about use of mercury (%)



Media preference to receive more information (%)



Disposition to reduce and eliminate the use of mercury (%)



### 3.

## Awareness strategies implemented

### 3.1. Design of the Awareness Plan

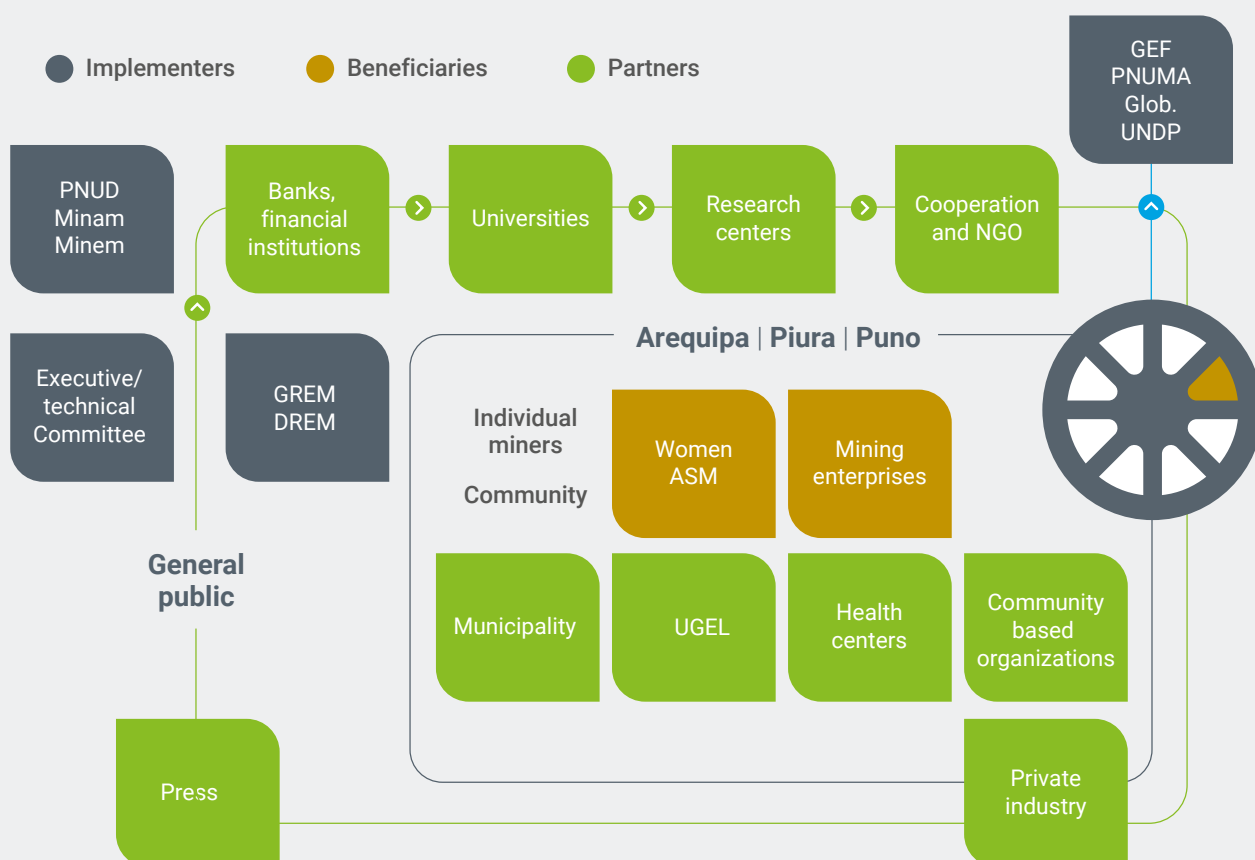
Awareness-raising activities are part of the comprehensive communication plan of the planetGOLD Peru project. Thus, for its design, the various target groups were considered as recipients and interlocutors, differentiated by the link established to achieve the project's purpose regarding the reduction and elimination of mercury in ASM. The expected outcome, in terms of awareness raising, was to have 19 000 women and men sensitized on the dangers of mercury and ways to reduce its use in ASM between 2020 and 2024.

#### STAKEHOLDERS PROJECT MAP

● Implementers

● Beneficiaries

● Partners



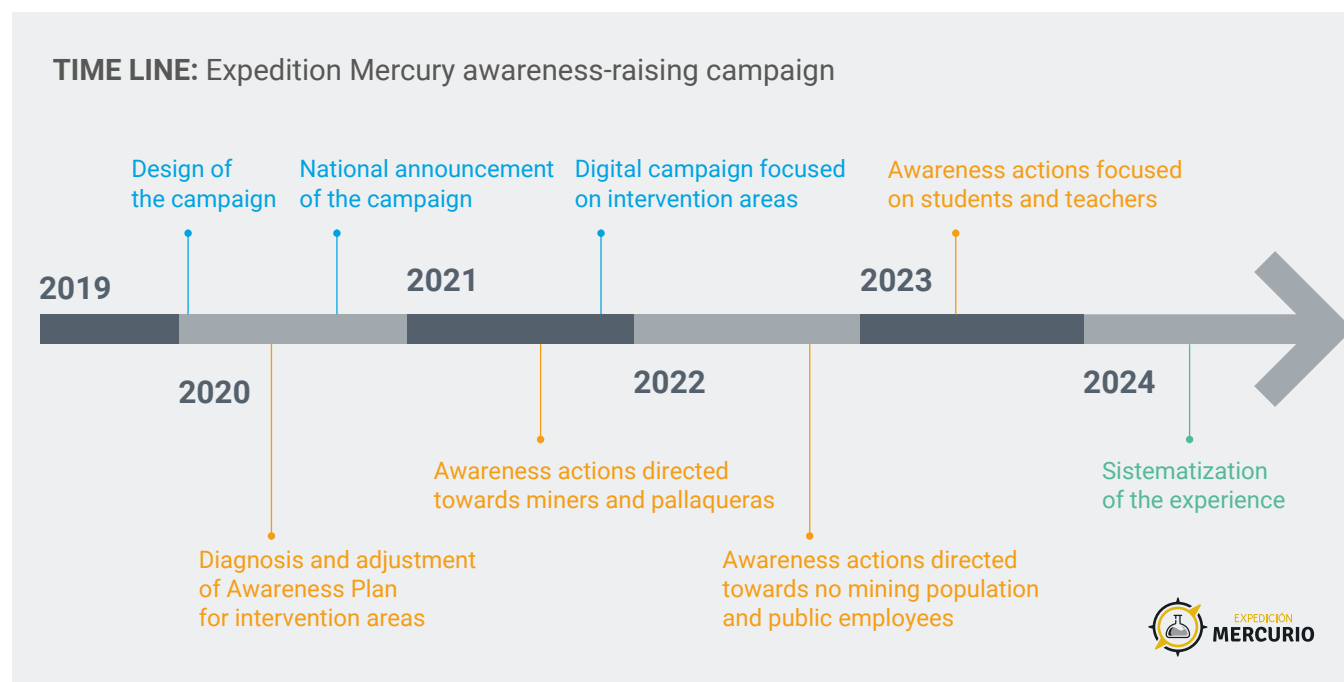
Awareness-raising for a change of attitude in the use of mercury was approached in two ways: (1) through digital and mass media, such as social networks or radio; and (2) face-to-face activities in the project intervention areas, such as talks and workshops. Due to the global situation of COVID-19, during 2020 we proceeded first with the design of the campaign and launching in digital media; then, during the interviews and focus groups of the awareness-raising diagnosis, we validated the proposed strategies in the field, adjusted the communication channels and messages, as well as received suggestions from the mining and non-mining population.

The validation process for the design of the awareness campaign also involved the Ministry of the Environment and the National Institute of Health, which, as specialized institutions, were able to review the messages from the technical and relevance aspects. Also, for validation and involvement in digital dissemination, the awareness campaign plan was presented to the national communications team of the United Nations Development Programme, the Ministry of Energy and Mines, the Regional Management of Energy and Mines of Arequipa, the Regional Directorate of Energy and Mines of Puno, and the Regional Directorate of Energy and Mines of Piura.

In parallel to the awareness campaign, the dissemination of good practices and the training of leaders and spokespersons were developed. This was done in order to promote responsible and mercury-free mining practices through the life stories of people or communities that stopped using mercury in their activities.



On the other hand, face-to-face awareness-raising actions in the intervention areas require a certain social acceptance by the mining communities. For this reason, the project decided to enter progressively through awareness-raising; first, with miners, mines and ore sorters in the regions of Puno, Arequipa and Piura. In a second stage, awareness-raising activities were carried out with local and regional officials, the non-mining population and health centers. Finally, in the last two years, we worked with secondary schools and universities.



### 3.2. Launch of the Expedition Mercury campaign

The design of the awareness campaign was based on the search for an educational and interactive process that would invite the population to start an expedition in search of new knowledge about mercury, in order to be informed and avoid its use. The campaign was called "Expedition Mercury" and, on the occasion of the Mercury Pollution Action Day, was launched on October 10, 2020 through digital media, due to mobilization restrictions due to the COVID-19 pandemic.

Target	Public	Messages
Inform and raise awareness about the impacts of mercury on human health and the environment.	Women and men in the mining regions of Piura, Arequipa, Puno and Madre de Dios.	<ul style="list-style-type: none"> <li>– Mercury affects human health and the environment.</li> <li>– Women and men miners can avoid the use of mercury through clean technologies.</li> </ul>

# 2020

## Communication channels and products

### Landing page [www.expedicionmercurio.com](http://www.expedicionmercurio.com):

The page was designed in an interactive format with information on mercury, its impacts, the Minamata Convention and actions to avoid its use in mining and daily life. During the first month of the campaign, the page received 1 210 unique visits from social networks.

### Communication kit for social networks:

8 banners were designed for Facebook and Twitter, which were disseminated through the project's own media and social networks of Minam, Minem, UNDP, INS, GREM Arequipa, DREM Puno, DREM Piura, and DREM Madre de Dios. Similarly, dissemination on social networks was carried out between October and November, which resulted in 43 543 people interacting with the publications.

### Video (click this link):

The 2D animated video explains, in a summarized and clear way, the campaign's messages. This is done through two characters that represent specialists in environmental and health issues of the campaign. At this stage, the product was produced only in Spanish, as there was still no validation of the awareness-raising diagnosis that would allow the inclusion of another language for local actions in the mining communities. The video was disseminated through the project's own channels and campaign partners, reaching 4 686 reproductions.



1. Banners for social networks.

2. Landing page.

3. 2D animated video.

### Radio spots (listen to audio):

Two radio spots of 30 seconds each one was developed. One is aimed at the mining public and emphasizes the damage to the nervous system from inhaling mercury vapors, and the other is aimed at the general population, warning of the risk of exposure to mercury from eating carnivorous fish. These audios were played 447 times on 6 regional radio stations with a reach of 30 000 listeners: Grupo RPP Piura, radio Cutivalú, Exitosa Arequipa, Grupo RPP Puno, radio Onda Azul and radio Madre de Dios. Likewise, an interview was conducted to talk about the campaign on radio Cutivalú for the Piura region.



### Text messages:

4 messages were prepared and sent to the telephones of 5 000 miners in the regions of Arequipa, Puno and Piura. This was done through Alerta minero which, through text messages, supports the formalization and management of small miners.

## 3.3. Expedition Mercury in the Mining Community

In 2021, with the return to face-to-face activities, it was possible to realize this type of activities aimed at the mining population. Digitally, the campaign also focused on the intervention areas, involving the local and regional government in the dissemination, with the commitment to subsequently develop activities aimed at public officials and the non-mining population.

Target	Public	Messages
Inform and raise awareness about the impacts of mercury on human health and the environment.	Mining organizations, sorting associations and civil society in Arequipa (Chaparra, Huanuahuano, Mariano Nicolás Valcárcel), Piura (Las Lomas, Sapillica, Suyu) and Puno (Ananea).	<ul style="list-style-type: none"> <li>- Mercury affects human health and the environment.</li> <li>- Women and men miners can avoid the use of mercury through clean technologies.</li> <li>- The use of clean technologies allows for higher gold recovery.</li> </ul>



## 2021

### Communication channels and products

#### Landing page [www.expedicionmercurio.com](http://www.expedicionmercurio.com):

The page remained active from its launching until 2024. Subsequently, at the close of the project, it would be handed over to the Ministry of the Environment so that it could be incorporated into its EDUCCA environmental education program. During 2021, the *landing page* received more than 934 unique visits.

#### Communication kit for social networks:

4 *banners* were designed for Facebook, which were disseminated through the project's own media and social networks of Minam, Minem, GREM Arequipa, ARMA Arequipa, DREM Puno, District Municipality of Ananea, DREM Piura and the District Municipality of Sapillica. Dissemination on social networks took place between October and November, which resulted in 8 056 people interacting with the publications. The content of the *banners* was adapted to a mining public, with special emphasis on the health problem caused by exposure to mercury vapors and the consumption of fish with organic mercury.

#### Video in Quechua (watch video):

The animated video was dubbed into Collao Quechua, a language spoken by 45 % and 64 % of the people surveyed in Puno and Arequipa, according to the awareness-raising diagnosis. The video was reproduced from the project's Facebook and YouTube accounts, and allies such as the District Municipality of Ananea, the DREM Piura and GORE Arequipa. At the end of the year, it had more than 60 thousand views.



1-2. Banners for social networks.

### Radio spots in Quechua (listen to audios):

The two radio spots produced in 2020 were translated into Collao Quechua. Both the Spanish and Quechua audios were played 579 times on 4 regional and local radio stations: radio Cutivalú, in Piura; Corporación Maya and radio La Voz, in Arequipa; and radio Onda minera, in Puno.

### Workshops and talks:

In 2021, 8 face-to-face awareness workshops were held, aimed at miners, miners and ore selectors in Puno (Ananea district) and Piura (Suyo and Sapillica districts), in addition to 2 virtual talks, one aimed at non-mining population and the other at ASM. A total of 298 people participated (32 % women and 68 % men). Among the workshops aimed at the mining population, the message of health care and greater profitability

through the use of clean technologies without mercury stood out.

### PPTs and diptychs:

The face-to-face and virtual sessions required the preparation of two types of presentations and diptychs with differentiated messages for each local audience. The products aimed at the mining and non-mining population in general addressed, in a comprehensive manner, the risks of exposure to mercury, providing general recommendations to reduce or avoid its use. On the other hand, products aimed at the mining population addressed, in a more detailed and technical way, the different ways to reduce and eliminate the use of mercury in the mining practice, from the use of retorts to the installation of gravimetric plants.



PPT and diptych for general public.



PPT and diptych for mining population.



### 3.4. Expedition Mercury in local and regional governments

In 2022, awareness-raising activities continued with the local population, with the main target audience being public officials in the districts where the planetGOLD Peru project was directly involved. These actions allowed raising awareness not only among them, but also indirectly among their families, in addition to turning them into promoters and allies of future awareness actions in their localities.

Target	Public	Messages
Inform and raise awareness about the impacts of mercury on human health and the environment.	Public officials and non-mining population of Arequipa (Chaparra, Mariano Nicolás Valcárcel), Piura (Las Lomas, Sapillica, Suyo) and Puno (Ananea).	<ul style="list-style-type: none"> <li>- Mercury affects human health and the environment.</li> <li>- Women and men miners can avoid the use of mercury through clean technologies.</li> </ul>

## 2022

Communication channels and products

1-2. Promotional ads for awareness-raising workshops.

**1**

**2**

#### Workshops:

Throughout the year, 8 face-to-face and virtual workshops were held, which brought together a total of 298 people (32 % women and 68 % men). In addition, socio-environmental awareness-raising workshops were held on "Mercury impacts, gender equity and Sustainable Development Goals", through which, in addition to raising awareness of the impacts of this substance, the aim was to make visible the issue of gender in ASM and its role in achieving the Sustainable Development Goals.

During the first half of the year, a workshop was held in Puno with the participation of officials from DREM Puno, representatives of CAR Puno and the Municipality of Ananea. In Piura, two workshops were held with the participation of officials from DREM Piura, as well as representatives from DIRESA, CAR Piura and the district municipalities of Sapillica and Suyo, related to environmental issues.



In Arequipa, 2 face-to-face workshops were held with the participation of officials from the district municipality of Chaparra and the municipality of the small village of San José, as well as miners and ore selectors from the San José - La Eugenia area.

In July, a virtual workshop was held for civil servants of the Regional Government of Arequipa; and in September, a first pilot workshop was held for secondary school students and teachers in the district of Chala (Arequipa). In October, the workshops and talks culminated with a virtual presentation aimed at miners and professionals involved in ASM.

### PPT and diptychs:

In addition to the diptychs and presentations prepared in 2020 and 2021, the sessions for public officials required the preparation of 3 additional presentations. The first focused directly on health impacts, which were prepared and presented by a representative of the Ministry of Health. The second was related to the issue of gender in artisanal mining; and finally, the third was related to the Sustainable Development Goals.



PPT for public employees.

## 3.5. Mercury Expedition in educational institutions

Awareness-raising activities with schools began in 2023, several of which had been contacted previously and confirmed their willingness to receive workshops for their teachers and students. At this stage, in Arequipa, it was decided to include the district of Chala in the awareness-raising activities, due to its geographical proximity to the Chaparra mining operations and because the area has the largest number of beneficiation plants where gold from ASM in Peru is processed. The selection of the schools was based on two main criteria: geographic location and number of students. Thus, five public secondary schools were selected: in Puno, the Ananea industrial-technique public school; in Piura, Sapillica and Almirante Miguel Grau de Suyo public schools; and in Arequipa, the Simón Bolívar public school (Chaparra) and Hortencia Pardo y Mancebo public school (Chala).

Target	Public	Messages
Inform and raise awareness about the impacts of mercury on human health and the environment.	Students and teachers from Arequipa (Chaparra, Chala), Piura (Sapillica, Suyo) and Puno (Ananea).	<ul style="list-style-type: none"> <li>- Mercury affects human health and the environment.</li> <li>- Women and men miners can avoid the use of mercury through clean technologies.</li> <li>- For the well-being of our localities, let us avoid the use of mercury.</li> </ul>

2023

## Communication channels and products

### Educational kit:

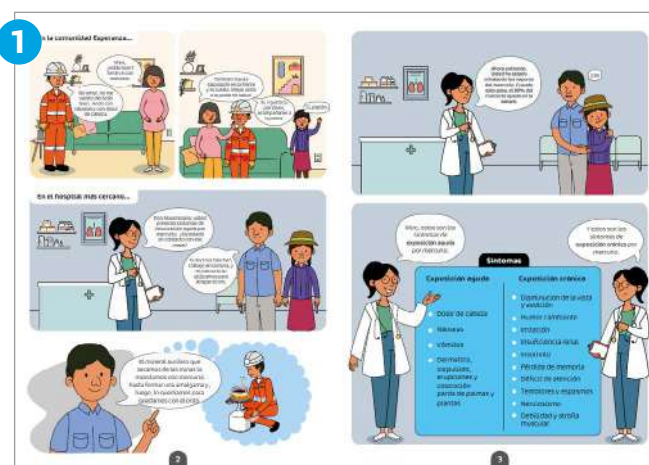
**Educational kit:** Prior to the awareness-raising workshops with the educational centers, an educational kit was developed to provide information and invite reflection, in a simple and playful way, on mercury contamination and the actions that can be taken to avoid or replace its use at home and in the community. The kit consisted of 4 products: a booklet, a poster, a board game and a kit guide.

The booklet was thought as a comic book, in order to capture the attention and facilitate the reading of children, adolescents and adults who do not necessarily have the habit of reading. The characters, which had been previously designed in 2020, adopted names to tell the story of the miner Maximiliano in the village of La Esperanza, the concern for his health due to his exposure to mercury and the way he involves his community in a transition towards the use of clean technologies.

The poster, on the other hand, was added to an informative role that helped to contextualize the messages about mercury in an educational center. After validation, an activity was incorporated into the session in which participants designed their own posters, allowing them to adjust the information to their local context.

The board game was conceived as a learning assessment process. Players had to choose one of the four cartoon characters to go through a circuit of questions about the impacts of mercury and ways to prevent its use, until they reached the goal, which was to eliminate the use of mercury in the village of La Esperanza.

The pedagogical kit guide was developed for use by teachers and environmental promoters. It indicates the process, the dynamics of the awareness workshops and the use of the booklet, poster and board game.



1. Booklet.
2. Poster.
3. Board game.

## Workshops:

In 2023, a total of 41 face-to-face workshops were held, aimed at students and teachers of secondary education and population linked to educational centers located in the districts of Ananea, in Puno; Chala and Chaparra, in Arequipa; Suyo and Sapollica, in Piura; as well as higher education students linked to environmental and mining issues in the regions of Arequipa, Piura and Puno. A total of 2 222 people participated (47 % women and 53 % men).

First, workshops were held to validate the pedagogical kit. For this purpose, in coordination with the school principals, two workshops were held for each educational institution: one with the environmental brigadiers of each classroom and another with the teachers (priority was given to Science and Technology, Communications, Art and Culture, and Social Sciences).

Secondly, the workshops were developed with the rest of the students of the secondary schools. In each region, the pedagogical kit guide was used for their execution, although some variations were made according to the criteria and times of each school. In Chala, the teachers of the Hortencia Pardo Mancebo secondary school took the initiative to lead the sessions with their students and, with the support of the consultant assigned in the region, organized an internal environmental fair, which made it the only institution that included, in the subject of Science and Technology, a session called "A miniature world". In the other schools, it was the consultants and the project's communication specialist who led the workshops for the students, while the teachers played the role of accompanying their students.

Thirdly, field activities involved parents in fairs and talks open to the population near the schools. This was done in coordination with the educational centers and the environmental managers of the district municipalities.

Finally, the awareness-raising workshops were conducted with higher education students who belonged to a network of environmental volunteers or were studying careers related to mining or the environment. In Arequipa, students from the San Agustín National University and the Continental University participated; in Piura, students from the Piura National University participated; and in Puno, students from the Altiplano National University, which belongs to the RUA volunteer network, participated. After the awareness-raising workshop, this network participated in a guided tour on the operation of the gravimetric plant, located at DREM Puno.

In addition, 3 virtual workshops were held during the year for the mining population, with the participation of 178 people (37 % women and 53 % men).

To close the awareness-raising activities with the schools, in 2024 the story and drawing competition Expedition Mercury was developed, which was aimed at the same 5 educational centers with which the workshops were held the previous year. The contest sought to test the knowledge acquired by the students and to gather their perspectives on mercury and ASM from a local perspective. To encourage greater student participation, a *tablet* was arranged as a prize for first place, through the sponsorship of Inca One company.

Target	Public	Messages
To encourage secondary school students living in mining areas to reflect on the impacts of mercury on the environment and people's health, in order to raise awareness and promote responsible practices to avoid the use of this metal in their communities.	Secondary school students from Arequipa (Chaparra, Chala), Piura (Sapollica, Suyo) and Puno (Ananea).	<ul style="list-style-type: none"> <li>- Mercury affects human health and the environment.</li> <li>- Women and men miners can avoid the use of mercury through clean technologies.</li> </ul>



## 2024

### Communication channels and products

#### School competition:

The "Expedition Mercury" story and drawing competition was held during the first two months of the 2024 school year. In total, 122 works were received from students of Ananea industrial-technique Public School, Secondary School of Sapollica, Almirante Miguel Grau Public School (Suyo), Simón Bolívar Public School (Chaparra), Hortencia Pardo y Mancebo Public School (Chala).

The competition rules were shared through the principals and teacher liaisons of each educational institution. In it, students were invited to submit original and unpublished works that address issues related to the impacts of mercury and its responsible practices. The stories had to be short stories in any of its subgenres (fantastic, realistic, science fiction, unclassifiable) and the drawings had to be made with pencil, colored pencils or markers on white bond paper, A4 size.

The schools appointed one or more teachers responsible for selecting and submitting, digitally, the works that would represent them in both categories. The project, for its part, was in charge of the evaluation process by appointing a jury that evaluated the creativity, message, presentation and attention to detail of the works.

The drawing that won first place was prepared by Karla Pumarino, a student from Hortencia Pardo Mancebo School, in Chala, who received an outstanding score in all evaluation criteria. Her message about the impacts of mercury on health and the environment was presented in a precise way and with her own technique.



1. Competition rules guide.
2. Winning drawing by Karla Pumarino.

Likewise, the story that won first place was called "A miraculous awakening", written by Ismael Ramos, a student of Simon Bolivar School, from Chaparra. The story tells the story of Alejandro, who lives in an agricultural and fishing area that mysteriously experiences changes in the water, soil and air, so he decides to search for and confront the cause of the problem: mercury.

The 6 students who won 1st, 2nd and 3rd place in the story and drawing categories were awarded 2 *tablets*, 6 backpacks and 2 school kits for their outstanding performance. During the award ceremonies, the teachers involved in the competition and the rest of the students whose works qualified for evaluation also received a present, as a way of thanking them for their effort and time dedicated to the competition.

The winning entries and those with honorable mentions will be included in a book compiling the stories and drawings, which will be published in Spanish and English, thus highlighting the work done by the adolescents and making visible the problems and good practices related to the use of mercury in their localities.



*Photos of the award ceremonies at Chala, Ananea, Suyo and Sapollica.*

## 4.

# Results and lessons learned

- The awareness strategies, implemented between 2020 and 2024, reached 54 890 people, 42 % of whom were women and 58 % men. This figure exceeds the 19 000 people initially targeted by the planetGOLD Peru project.
- Awareness-raising is a powerful tool that promotes the dissemination of messages on good practices and the prevention of health risks and environmental contamination due to mercury exposure. Throughout the development of the awareness-raising actions in the mining communities, both the mining and non-mining population gained knowledge about the negative impacts of mercury and showed a change in attitude towards the inappropriate use of this substance in gold mining. However, the change in practice cannot be achieved by raising awareness alone. For this reason, the change towards clean technologies in artisanal and small-scale gold mining is accompanied by other lines of work required by the miners; these were developed through strategies linked to other components of the project, such as technical support for the use of gravimetric plants, formalization and access to financing.
- The implementation of awareness-raising actions in the local territories faced several challenges that delayed their start. In 2020, due to the COVID-19 pandemic, project members were not able to travel to the regions until the last quarter of the year, months in which the diagnosis could only be completed. Likewise, it was only in 2021 that it was possible to sign letters of collaboration with the mining companies that would work on the project in the following years, in which localities, such as the village of San José, would be incorporated and the districts of Paimas and Huanuhuanu would be withdrawn from the Awareness Plan.
- The awareness-raising diagnosis made it possible to adjust the channels and messages of the Awareness Plan. The results of the surveys showed the preferences of miners and local population for the Facebook social network. Therefore, during 2021 the digital actions, focused on the intervention areas, used this channel through advertising campaigns. Likewise, there was a notable presence of Quechua speakers among the project's partner organizations in southern Peru. For this reason, that year the video and radio spots of the Expedition Mercurio campaign were translated into collao quechua.
- The diagnostic surveys also showed that the population in the intervention areas perceives mercury as a greater health risk than environmental contamination. This was quite noticeable during the face-to-face workshops, in which, above all, the mining population and women requested detailed information on symptoms and ways to prevent ailments caused by mercury poisoning. Although the Ministry of Health carries out some health campaigns in districts such as Ananea, the institution's actions are limited by the lack of resources to respond to health risks due to exposure to heavy metals, metalloids and other chemical substances.
- The mining population and students in the project intervention zones are more receptive to visual information. During the different workshops and

talks with miners, ore selectors and students, there were two moments of greater attention. The first was the projection of photos or video on the Minamata tragedy in Japan and the irreversible consequences on the health of its population; and the second was the projection of a video showing how mercury, at room temperature, evaporates, so that it remains invisible to the human eye, but visible under ultraviolet light.

- The topics of greatest interest to the mining population during the awareness-raising workshops were the following: health risks, the benefits of using clean technologies and technical installation in their mining operations. The male mining population, dedicated to refining or quimbaiteo, was the most concerned about the effects on their health, which, added to the evidence of higher gold recovery, through the use of gravimetric plants that generate higher profitability, motivated the participants to request training and technical support for the installation of these clean technologies in their mining operations.
- The limited telephone and internet connectivity, as well as the distance between the intervention locations, made the implementation of the Awareness Plan more complex. Although connectivity in the three intervention regions was limited in the mining operations, the Arequipa region represented a greater challenge in the implementation of both workshops or virtual talks and face-to-face activities, since, in addition to not

having a stable connection for internet meetings or phone calls, the distance between each of the locations made the implementation of simultaneous face-to-face actions more complex, so that the visits required more time.

- The awareness-raising activities in schools were designed for adolescents and young people, however, it is possible to extend them to boys and girls. In this sense, the materials developed in the pedagogical kit can be used in primary schools, since it presents information on mercury, its impacts and ways to avoid its use in a playful and clear way. In addition, many of the children from mining communities show knowledge about terms and processes in artisanal mining, which are transmitted by their parents.
- The involvement of national, regional and local partners was realized throughout the process of validation and execution of the Awareness Plan. Although, during the four years of project implementation, partner public institutions (ministries, regional governments, district municipalities, health centers, schools and universities) changed officials on several occasions, the relationship with the project remained stable, so that their support was available at all stages of the Awareness Plan. For this reason, the materials developed for the Expedition Mercury campaign will be used by the Ministry of the Environment, through its municipal program EDUCCA, which will make them accessible to the public.



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