



## RESEARCH ARTICLE

## Relationships: Community, Environment and Artisan Mining in Andean Areas of the Apurímac Region, Peru, 2024

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## ABSTRACT

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The purpose was to describe the mining-environmental community relations in the Andean Apurimac region of Peru. The type of research was basic, non-experimental design of concurrent triangulation, ex post facto scope. The sample consisted of: interviews with community authorities and active members of artisanal mining. Community relations present a diverse reality in the events that occurred, limited to: a) the commitment assumed by the parties that is related to exhausting the exploited vein; b) the management of the territory and the land acquisition policy, subject to the distribution of the communal territory with respect to the natural resources they possess and the price offer for the land; c) the access to easements that is conditioned to the exploitation capacity and the participation agreements with communal labor; d) the social prevention and health policies, linked to compliance with the conditions and commitment of the mining company, with respect to safety and health at work, in addition to the economic compensation for unskilled labor; e) the economic and environmental impact, the first related to the change and improvement in the family income of the community member and the second with respect to limiting the reconversion of the land, minimizing the alteration of the traditional infrastructure and protecting the outcrops of water resources, and f) the institutional support of the sector through the permissible quasi-formal instrument REINFO. Conclusion: agreements and commitments are like a guitar string, in the event of non-compliance or alteration by one of the parties; this triggers the decision to break the harmony, mistrust is sharpened, dialogue is limited; the community develops mild to extreme forceful actions to claim the commitments, going as far as destroying property and physically attacking the mining company.

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## 1. INTRODUCTION

In South America, a considerable number of countries have mining potential, generally located in the Andean region, juxtaposed with rural populations that take advantage of the diversity of natural and implanted resources.

Over the years and with accumulated experience, the Andean populations have understood that it is not enough to simply live off agricultural economic activity, because the income they obtain from it is subject to external factors that complement the agricultural economic activity, these being: the climate that must be adequate, some natural phenomenon of low intensity, outbreak of a social conflict with a low presence of violence; and the internal factors we have: the type of geography of the territory, the availability of water, the financing of inputs and infrastructure, both of which affect the level of income that can be obtained, and which is subject to the price of the product in the market

at the time of harvest, the transportation prices for the distribution of the product (CEPAL, FAO, IICA, 2021).

Artisanal and informal mining in Peru is old, its ancestors date back to the republican era of the mid-twentieth century, its social and organizational dynamics, productive capacity, today differ from yesteryear, are different, and have a greater impact, known data show that, in the nineties of the twentieth century, artisanal production represented 50% of the total national gold production, it was strengthened by free market reforms and the mining boom (Manrique, Sanborn, 2021)

Artisanal and small-scale mining activities in Latin American countries have grown steadily; historically and juxtaposed with the environmental impacts they generate, such as: deforestation, river pollution, loss of biodiversity due to the preponderance of illicit activity in the sector; the figures are extreme in South America, it is estimated that illegal mining represents 28% of total gold extraction, in addition to involving labor exploitation, child labor in native communities (World Bank, 2020).

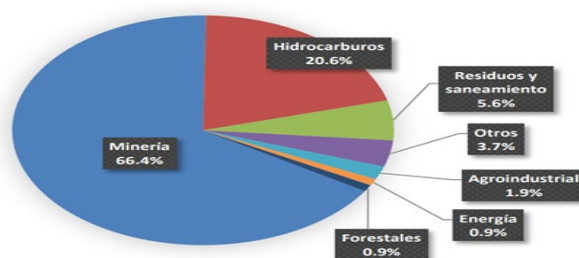
In the Peruvian case, according to the Environmental Assessment and Oversight Agency, OEFA (2020), illegal mining activities biased towards artisanal and small-scale mining are responsible for an average of 1,700 hectares of annual deforestation in the Amazon.

In Madre de Dios, the area of small-scale and artisanal mining, whose activities can be formal, informal and illegal; as a result of the implementation of dredges that disintegrate and eliminate all species of minor flora and fauna of the Amazonian ecosystem in the mining exploitation space known as the mining corridor, covers 18,174 hectares in the last years 2021-2023; outside the mining corridor, mining deforestation reached 5,707 hectares (Monitoring of the Andean Amazon Project, 2023)

Likewise, artisanal mining, considered as a habitual livelihood activity carried out by a person or group of natural or legal persons and made up of associations or other legal forms, processed manually with basic equipment, focuses on strengthening the REINFO registry, which guarantees exploitation, without having completed the mining formalization process, whose exploitation or mineral benefit capacity is no greater than 25 metric tons per day, and for non-metallic minerals the exploitation capacity will be up to 100 metric tons per day (INDAGA, 2021). The danger is that the partial registration, the operating permit, generates conditions that allow REINFO registries to be added to expand the exploitation capacity and expand the subscription of agreements and contracts with mining owners, until reaching close to 1,000 hectares; this is the cornerstone from which socio-environmental conflicts arise.

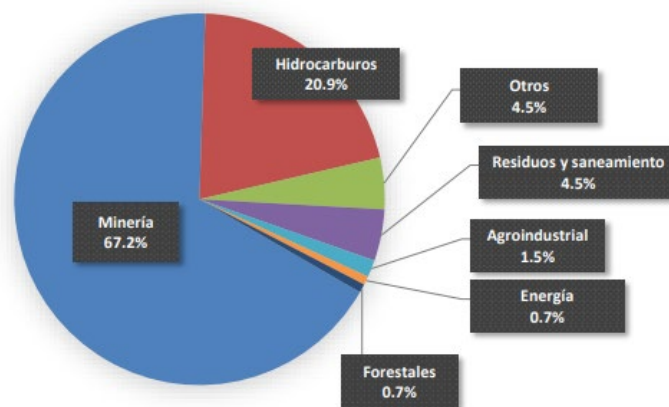
It is important to recognize that, according to Sánchez and Vela (2022), the socio-environmental conflict is a failure or lack of an economic activity developed by a group in society, which affects others directly and indirectly; therefore, mining-environmental community relations were poorly developed, from awareness to the approval of the social license.

In Peru, as of December, the Ombudsman's Office (2022) presents evidence that we have 211 social conflicts throughout the Peruvian territory, of which 152 are active and 59 are latent, 66.4% of which are active in dialogue, 83.2% (84 cases) are socio-environmental. Below, we present Figure 1, regarding the number of active socio-environmental conflicts by activity as of December 2022.



**Figure 1: Socio-environmental conflicts by activity as of December 2022. Note. Ombudsman's Office-SIMCO; Peru, 2022.**

As of December, the Ombudsman's Office (2023) presents evidence that we have 215 social conflicts throughout the Peruvian territory, of which 168 are active and 47 are latent, 62.5% of which are active in dialogue, 57.1% (96 cases) are socio-environmental. Below, we present Figure 1, regarding the number of active socio-environmental conflicts by activity as of December 2022.



**Figure 2: Socio-environmental conflicts by activity as of December 2023. Note. Ombudsman's Office-SIMCO; Peru, 2023.**

However, we cannot ignore the legal and organizational aspect, according to Cabrera (2019) regarding the distribution of natural resources, for their exploitation by all members of the peasant community, which is guaranteed by the majority agreement and participation in mining operations. From Valle (2019) stated that the community has a communal board with legal status, which directs and administers the decisions and agreements of the general assembly of community members; this is where the links, interactions, deals and final agreements are born, which are legitimized by all community members; one of the agreements is on the social permit and license, both for the mining exploitation of a portion of the territory and the other regarding the use of the easement.

The balance of what was agreed and its implementation is focused on community mining-environmental relations, which respond equally to the ownership of the mining concession and investors; therefore, community mining-environmental relations are the Achilles heel for the parties: community, investors and concessionaire, to take advantage of the resources located in the territory for mining exploitation. Community mining-environmental relations are the strategy that allows for the improvement and sustainability of the mining exploitation process.

We understand that there are differences in mining-environmental community relations, which are subject to the context and culture where they are located; therefore, they differ and respond to the needs and interests of the context where they interact: community members, miners and investors. The research was limited to the Apurímac Andean area, due to the characteristics of the predominant type of artisanal mining, which is open pit, in addition to the number of events regarding reality and diverse interests, to the negative intensification of mining-environmental relations, which led to conflicts, whose record is in the Ombudsman's Office, the Attorney General's Office of the Nation of Peru; likewise, we will specifically take as a sample the outstanding cases in the central and southern Andean area of Peru.

The problem focused on describing the current state of mining-environmental community relations in the Apurímac Andean area. The research is justified because to date there are no studies on identifying and differentiating the type of mining-environmental relations that exist in the central and southern Andean area of Peru, even more so, related to the context in which they are developed and above all the legal mechanism that allows the expansion of this activity, which is REINFO. The research serves to make known the way in which the problem of artisanal mining should be understood and addressed, which is no longer just an economic situation, but also a social one.

## 2. METHODOLOGY

The methodological content of the research was to place ourselves in the mixed approach, for the reason that the research focused on reviewing documentation of the same context and interviews with communal authorities, active members in artisanal mining, the type of research was basic because we did not develop an application and subsequent evaluation; non-experimental design biased to concurrent triangulation, the scope is at an ex post facto level due to the recorded facts, which cannot be modified and the design was non-experimental (Hernández et al., 2018)

The procedure was: a) collect information from secondary sources, read it, analyze and summarize; b) collect information from primary sources through interviews, analyze and summarize; c) with the information from both sources, triangulate and describe.

To state that in order to develop the interviews with local artisanal mining authorities, we relied on Valle et al (2023) whose methodology is close to the particular cases of study; therefore, it was achieved, after a prior presentation with a bond of friendship; the context where artisanal mining exploration and exploitation takes place in Peru, goes through demands, conflicts; where the Peruvian state to date, to mitigate the various problems; as a fire extinguisher, established legal norms that allowed stability to artisanal mining exploitation, integrating the illegal one; therefore, community relations are developed through closed circles, direct relations, investment risk decisions in community groups, with aversion to state intervention and participation.

## 3. RESULTS AND DISCUSSION

### a. The commitment assumed by the parties that is related to exhausting the exploited vein.

Typically, when there is physical evidence of the existence of mineral in a vein during exploration, organized community members initiate procedures and inquiries into the current situation of the mining grid (covers at least 100 hectares), the mining claim generates a property right, which is the mining concession or mining right, the entire process is to investigate and find out the owner and current status of the property right if it is in force, this process is carried out before administrative bodies such as the regional energy and mines directorate or the ministry of energy and mines in the directorate of cadastre and mining claims; later locate the grid on the ground to explore if there is an overlap with another mining claim; the positive result of all the management, focuses on three situations: a) if the mining concession does not have a valid property right, then they proceed to enter to explore and exploit through the REINFO registry, b) if there is not enough evidence of mineral to be exploited in the mining concession and a sufficient vein is located within the limits and/or outside its boundaries, they proceed to enter and establish the boundaries of the mining concession through the REINFO registry, c) if there is an overlap of mining concessions, and one of them does not have a valid property right, then enter through the one with the deficiency of physical-legal sanitation; However, they are at risk because the possession and exploitation in the controversy does not easily grant them the REINFO registry.

These three technical situations that the community members dedicated to artisanal mining take advantage of are achieved because they have advice from experienced artisanal miners and recommended legal advisors with litigation services in the sector, they were strengthened over time, because the mining formalization regulations for artisanal miners from 2014 to 2023, through the Comprehensive Registry of Mining Formalization (REINFO) is only a simple sworn statement, proving the active RUC and third category in the mining activity. However, along with artisanal mining exploitation and informality, the partial use of energy technologies with less impact on the environment is being introduced, the same ones that strengthen their implementation through small-scale artisanal technologies, such as solar panels, oxidation ponds with biodegradable materials, among others.

Another aspect linked to the limited use of energy technology was presented by the Economic Commission for Latin America (August 2024) in the webinar meeting that brought together the Ministries of Mining of the Americas, which addressed the importance of strengthening the productive and institutional capacities of the artisanal and small-scale mining sector, as a support for the growing demands for essential minerals for the energy transition. It is necessary to discuss policies for small-scale and artisanal mining, to reverse small-scale mining informality, because in

the medium term they will begin to take advantage of the energy transition, otherwise they will maintain technologies that are not friendly to the environment, exacerbate social instability, strengthen inadequate labor and commercial conditions, generating barriers against them due to the poorly relevant extraction and commercialization process (ECLAC, 2022).

Maintaining the current conditions of small-scale mining exploitation, without monitoring or accompaniment from a governing body, Without a regulatory framework, it does not guarantee achieving significant improvements at a social level, much less technological; the mission and vision of exploitation until the vein is completely exhausted does not ensure that the health and well-being situation is better for artisanal miners who maintain direct intervention action, unless at mine closure, the provisions of the final management and closure plans are complied with.

**b. The management of the territory and the land acquisition policy that is subject to the form of management and distribution of the communal territory with respect to the natural resources they possess and the price offer for the land.**

According to Fiestas (2019) in the research on legal crimes in natural resources, we have:

“...man was in a hurry to carry out activities that would satisfy his primary needs, mining was one of them, using stones, ceramics and later metals taken from the earth's surface for the manufacture of tools and weapons, over the years the development of these activities grew and evolved to create large economic systems that allowed to strengthen what we know today as first world countries” (p. 14)

The evolution of the mining system and industry took off in Peru in the 1980s, due to the rise of the Asian giant China and emerging countries such as South Korea, India, Indonesia, etc., which made possible the increase in international commodity prices. In Latin America, given the rigidities, social culture, legislation, and poverty problems, the population close to and with rights to mining concession areas became aware at the end of the first decade of the 21st century of the forms of exploitation based on current legislation. Such is the case of the intervention and appropriation of mining concessions titled in communal territories by the community members, who begin negotiations with the holders of the mining concession, in order to jointly develop the final exploration and start the exploitation of the mineral. The agreements or deals are arranged in various ways, and in many cases no agreements are even reached, for the reason that the distribution of risks and benefits is not convenient for either party.

Depending on the interests and position of the community member, investor and concessionaire, responsibilities are usually shared: the community member provides land and security; the investor provides financing and the concessionaire provides the paperwork, licenses, permits and part of the investment; the distribution of profits ranges from equal parts or percentages according to the degree of risk in the investment. Another modality is the sale of the land used by the community member, entering into a quote and purchase proposal for an amount determined by the mining company, with the incentive of placing unskilled family labor in the mine.

There are also other forms of negotiation, extreme, that do not lead to a good outcome: a) the first is the abuse of the community member, due to the position he has regarding the possession and exploitation of the communal agricultural land; it is intolerable, because in many occasions they exceed their claims, demanding percentages greater than 20% of benefits, which is a considerable limit; b) the second is the delivery of royalties from the mining company to the community, based on the mining production, an average or minimum is established taking as a reference the percentage established from the value of the annual production; however, the amount that the community receives is sometimes less, this is due to the fact that international prices fall; this generates unrest in the community, it is not recognized by the community because it intends to maintain the percentages of benefits in the value of the year in which the international price was on the rise, regardless of the fall in international prices; this triggers economic conflicts and even blockades paralyzing mining production.

**c. Access to easements, which is conditioned by the exploitation capacity and participation agreements with communal labor.**

According to Palma (2022), all mining operations are subject to analysis and comparison of scenarios; first, mining operations and the environmental resilience processes of mining operations, an evaluation is carried out to ensure sustainability in mining operations, whose fields are: conservation of mineral resources, protection of demand, occupational safety and health, conservation of natural biodiversity and availability of water resources.

In general, after consulting the background information and interviews, various results obtained at the level of geography and mining activities in the Peruvian Andean zone, it is characteristic that the communal agreements and consensus with the mining company are related to the improvement programs to be implemented by the mining company, in accordance with the parameters stipulated in the remediation and environmental impact report, which specifically contains the delimited exploitation area, whose boundaries are defined, authorized, within which the mining activity is carried out, respecting the conservation indicators, environmental protection at the time of the beginning and progression of mining activities.

In addition, to ensure exploitation and maintain the right-of-way permit, sustainability indicators for mining and the environment must be met. These generally reach a medium level in the assessment, and remedial measures are implemented after the assessment report is carried out by the environmental expert. It is very important to relate the technical aspect with social development, which is guaranteed by compliance and demonstration of achieving the sustainability indicators. It should be remembered that the global sustainability index in terms of the acceptability of mining is obtained from the quotient of relating the compensation indicator and the development indicator;  $ISG = ((ISC+ISD)/2)*10$ ; It is usually the global sustainability indicator for accepting mining, the result of which must be located between the range of regular to higher, that is, between 45% to 60% and more, favorable community relations are determined, another essential aspect according to Cabrera (2019) is awareness, which "facilitates better communication, consequently the mining company obtains the consent of the peasant community and the development of mining exploration and exploitation in an appropriate manner without social conflict" (p. 7); For this reason, the deals and agreements for the placement of unskilled labor or communal labor exist and develop alongside mining decision-making and operations.

**d. Social prevention and health policies, linked to compliance with safety and health conditions at work, as well as economic compensation for unskilled labor.**

According to Franco (2016), prevention and compliance with occupational health and safety is, in the first instance, subject to the form of governance that is developed between the mining company and the peasant community, based not only on territorial planning, but also on mutual agreements of participation of the community members through the mining company or a miners' association, in mining exploitation with unskilled labor, generally known as laborers, without ignoring the standards of protection and health of workers, this allows for greater cohesion and social inclusion.

The above is reinforced and expanded by the study of Espinoza (2018) who in the conclusions indicated that, "the mining owner can acquire the consent of the communities to carry out mining, through adequate approval through the citizen participation mechanism, which focuses on respect for culture and conversation between actors" (p. 31) In the communal assembly, the conversation allows agreements to be reached, other consensus is generated, which are written in minutes, which cover up to the hiring of unskilled labor by the mining company, which is from the peasant community, in addition, if it exists, and if it is approved, of other modalities of joint work and even support for the advanced elderly population.

Likewise, from the study by Cabrera (2019), we can understand that maintaining a safety and health policy at work, in addition to timely and fair compensation, is part of the social responsibility of the mining company; because it assumes a commitment to improve and develop a culture of well-being towards its workers and environment, this form of administration is voluntary, which is born from communication with the peasant community; and then the joint work that contributes to reducing the state of poverty; the security and timely disbursement of the day's wage or salary, allows the peasant family to access greater economic opportunities.

Therefore, Cabrera (2019) concludes in his study that communication is important, and that it is born from a social, flexible, transparent environment, which allows analyzing and making decisions that benefit the community and the mining company; therefore, the contributions on security, among others, are progressive, limited, related to the social responsibility of the company; all of this described is confirmed by the communal authorities, with certain nuances in the agreements and final deals of the community with the investors and mining concessionaires.

**e. The economic and environmental impact, the first related to the change and improvement in the family income of the community member, and the second regarding limiting the reconversion of the land, minimizing the alteration of the traditional infrastructure and protecting the outcrops of water resources.**

According to Fiestas (2019) there are impacts that are noticeable, but they respond to decision-making; however, "...when minerals are extracted from a certain ecosystem, an environmental imbalance is generated and with-it potential damage to the environment. For this reason, it is urgent to force it to be carried out under the standards and limits prescribed in the special regulations or, failing that, to punish such conduct through criminal law" (p. 15).

There is an actor whose activities and relevance are necessary from the normative and coercive action; the state, seeks to counteract illicit behaviors, which generate consequences in the well-being of citizens and the environment, at the micro level in habitats that develop complex systems where various species are sustained that contribute to maintaining environmental conditions; therefore, the normative body is developed, so that in the future our well-being and that of the habitat where, as human beings, we interrelate and are dependent on other species are not put at risk; in this sense, section 22) of article 2 of the Political Constitution of the Peruvian State recognizes, as a fundamental right, the subjective attribute of "enjoying a balanced environment and adequate to the development of the life of the person" (p. 15)

However, it is necessary to recognize that, given the primary interviews and source in Ramírez (2022), which agrees that the population of the peasant communities confirms that the mining company contributes to environmental projects, such as: planting trees, water care, among others, and that its focal point is the communities or sectors contained in its area of influence, and they also try to reduce environmental damage.

Likewise, Marín (2021) stated that restrictions on popular consultations weaken the behavior of accepting deals, negotiations between actors, the perception taken by the community members and third parties involved, causes barriers to emerge, which leads to paralyzes, suspension of agreements, consensus, which causes a strong impoverishment of mining-environmental community relations, and from the legal point of view, the non-compliance with agreements is aggravated, which leads to violation of agreements, which is evidenced in alteration of the environment, contraction of contract benefits. From the interviews carried out, the authorities state that the community meetings and assemblies where advances and setbacks of agreements and deals are presented are important because they strengthen mining-environmental community relations, demonstrating transparency and scope of achievements in favor of the parties; refusing to present reports regarding compliance with agreements and deals expands the conflict that sustains mistrust between the parties.

**f. The institutional support of the sector through the permissible quasi-formal instrument REINFO**

As of December 2024, given the ineffectiveness and gaps in the projection of the new Artisanal Mining Law by the head of the Ministry of Energy and Mines of Peru, who lost his position due to his removal; the demonstrations of the artisanal miners' union that reached the city of Lima-Peru to demonstrate and exert social pressure for the extension of the quasi-law of mining formalization on the eve of cessation; and the participation and final interference of the Congress of the Republic of Peru through the Commission on Mining-Energy Affairs, the final draft of the extension was approved in a plenary session of Congress, granting a six-month extension to the artisanal mining formalization process known as REINFO.

This political decision, due to social pressure, does not guarantee that the artisanal miners' guild will be inclined to formalize, since REINFO is in force, which is a sworn declaration of small-scale mining activity with similar technological instruments, which authorizes up to a certain limit of productive



capacity for mineral exploitation; the scenario close to the validity of the extension is, on the part of the artisanal miners' guild, to pressure for the extension up to two years; therefore, the conditions of negotiation for rights, exploration permits and mining exploitation at the artisanal level will continue, the achievement is to pressure through marches, roadblocks, to contain the flow of supply of goods, political pressures and compensations to congressmen who maintain an alliance with the artisanal miners' guild that at the same time generates their permanence and reelection of the movement or electoral party.

#### 4. CONCLUSIONS

Community mining-environmental relations present a diverse scenario and reality in the events that have occurred, they are different according to context and culture, limited to the commitment assumed by the parties, community member-investor-concessionaire, which respond to an environment of conditions, which remain constant with certain nuances; below, we detail:

The full exploitation of the mining site under artisanal conditions is pertinent due to the validity of the REINFO system, the conditions agreed with investors, and the deficiencies in cadastral and administrative records, which guarantees complete extraction of the projected mineral.

The management of the territory and the land acquisition policy are subject to the form of management and distribution of the communal territory decided by the communal assembly, related to the wealth of natural resources they possess and the price offered for the land when they are subject to sale or compensation within the communal territory, added to the agreements with the interests of investors and the holder of the mining concession, to begin the exploration and exploitation processes.

Access to easements means the portion of territory that is given for the adaptation of transport routes, which is conditioned by the exploitation capacity and participation agreements with communal labor, support for the community, in addition to environmental care.

Social prevention and health policies are subject to compliance with occupational health and safety conditions, as well as economic compensation for unskilled labor based on preliminary agreements between the community and the mining company.

The economic and environmental impact is closely tied to the mining company's Social Responsibility actions in its surroundings. The first is related to the improvement in the family income of the community member, supported by the fact that the population is located in a context classified as being in a situation of poverty and where the mineral deposits are located, it is necessary to improve their spending capacity. The second is related to limiting the reconversion of the land, minimizing the alteration of traditional infrastructure and protecting the outcrops of water resources; which we identify and verify from the activities of water resource conservation, genetic improvement of livestock, transforming the quality of life and society by reducing the gaps in social need.

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