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ENVIRONMENTAL AND WATER CRISIS IN HIGH ANDEAN COMMUNITIES IN PERU: IMAGINARIES AND ECO-SOCIOPOLITICAL PRACTICES OF LOCAL ACTORS

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ABSTRACT

The enormous pollution of rivers and lagoons from various sources has led to an environmental and water crisis at the local and global levels. This phenomenon is a manifestation of the exhaustion of instrumental rationality, characteristic of modern Western society, driven by unbalanced power relations in the world, which over time has resulted in a global civilizational crisis. This situation is reflected in the environmental and water crisis in the area surrounding the Umayo lagoon in Puno, Peru. Based on the analysis and understanding of the crisis experienced in the high Andean communities of Puno, the objective of this article is to propose, from a critical Latin American perspective, a model/method for analyzing and interpreting this socio-environmental reality, based on the perspectives and practices of local actors. Based on a qualitative methodological approach, the study accounts for the sensitive and rational reasoning of local actors, who construct their meanings or social imaginaries regarding the socio-natural dynamics in the hydrosocial territory, expressed in the environmental and water crisis situation that affects the existence of humans and non-humans. Therefore, unlike other studies, this study proposes to approach the crisis phenomenon from the perspective of local actors, with an emphasis on the feelings, thoughts, social meanings, and actions developed around socio-natural entities (rivers and lagoons) as an eco-society, as a hydrosocial territory, as a subject, and as a movement. the perspective of post-human geography to displace the anthropocentrism that has predominated in Western civilization.

KEYWORDS: Local Actors, High Andean Communities, Environmental And Water Crisis, Civilizational Crisis, Social Imaginaries.

1. INTRODUCTION

The contamination of rivers and lagoons, attributable to activities such as mining, intensive agriculture, and urban development, has resulted in the degradation of aquatic ecosystems and the onset of a global environmental and water crisis. The issue is further compounded by the commodification of nature, which propels the excessive exploitation of resources.

This phenomenon is reinforced by neoliberal paradigms that influence eco-sociocultural coexistence. According to the research of Blanco-Wells & Gunther (2019) and Boelens et al. (2023), dominant epistemologies, rooted in hydrocratic and capitalist administrations, ignore local knowledge about river dynamics, perpetuating socio-environmental imbalance.

For the Umayo Lagoon (UL), the study area is part of socio-natural, political-economic, and cultural-symbolic systems (Boelens et al., 2023), because social, economic, political, and cultural actors interact around it. In this region, the exploitation of natural resources has influenced social perceptions of contamination of the primary water source for high Andean communities, leading to a biodiversity deficit from a multidimensional perspective (La República, 2020).

The LU is situated between the districts of Atuncolla, Vilque, Mañazo, and Tiquillaca, in the province and region of Puno, and has an area of 35.38 km2 (National Water Authority [ANA] 1979).

The lagoon is fed by seven tributaries, three of which are classified as main tributaries due to their permanent flow. The following three towns are located in the region: Vilque, Ccaccapunco, and Challamayo. The Llungo River is the sole effluent from the lagoon. The predominant economic activities in the region are livestock husbandry, agriculture, fishing, and mining, with the latter involving the extraction of gold minerals.

Mercury has been utilized for the purpose of reusing mining waste, a practice that has been demonstrated to exert deleterious effects on the environment (Atuncolla District Municipality [MDA] 2015). In this context, high Andean communities are demanding remediation measures to address the serious environmental pollution problems in the LU caused by heavy metals, as livestock and fish mortality has been observed (Proactivo, 2020).

Environmental and water crises do not only have technical or ecological roots; they are also deeply linked to political dynamics and unequal power relations between different social and economic actors (Estenssoro, 2021). The resolution of these issues necessitates the implementation of political decisions, as phenomena such as pollution, biodiversity loss, and climate change are manifestations of global political crises.

These crises have been described with terms such as ecological, civilizational, or global crisis, reaching their peak in the Anthropocene, an era marked by the geological impact of capitalist human activities, which has led to a planetary transformation with risks of extinction for humanity (Blanco-Wells & Gunther, 2019; Moore, 2016). The objective of this article is to propose a model/method for analyzing and interpreting the socio-environmental reality of the environmental and water crisis in the LU from a critical Latin American perspective. The model under consideration is predicated on the perspectives of local actors' imaginaries and practices.

In order to analyze and interpret the phenomenon of planetary crisis, this study draws on the theoretical approaches of social imaginaries, Latin American political ecology, and environmentalism of the poor.

2. SOCIAL IMAGINARIES

Social imaginaries are systems of social meanings that shape the ways communities are, think, and act, and regulate social practices through shared symbols and meanings (Castoriadis, 2007; García-Rodríguez, 2019; Geertz, 2003; Leff, 2010). These constructions do not represent an absolute truth, but rather multiple truths that arise from the unique perceptions of social actors (Randazzo, 2012). Their analysis involves questioning modern and instrumental views of consciousness, as social imaginaries significantly influence social dynamics and require legitimization through social relationships that promote cohesion (Baeza, 2000).

As collective construction processes, social imaginaries shape profound meanings and senses that enable societies to be established and guide praxis in specific social contexts (Gallegos, 2021, p. 552; Riffo-Pavón, 2022; Riffo-Pavón, 2022).

The role of these institutions is pivotal in the processes of social integration and transformation, functioning as agents of resistance to cultural colonization and as facilitators of the restoration of community dynamics from their fundamental principles, in the face of prevailing social norms (Castoriadis, 2007; Habermas, 1999; Leff, 2010). In this sense, social imaginaries can be considered both cultural reserves and sources of creativity for collective action (Martínez & Muñoz, 2009).

In the case of the environmental and water crisis, social imaginaries play a crucial role in articulating

the meanings that actors assign to the natural environment and its associated practices (Murcia-Murcia, 2023). In the high Andean communities of Puno, Peru, local imaginaries reflect the rupture caused by informal mining and pollution.

This rupture is eroding environmental and cultural dynamics, and it is promoting a radical imaginary as a tool for resistance and endogenous transformation (Quispe-Mamani et al., 2022, p. 317). A similar phenomenon can be observed in the struggle of the Mapuche people, whose collective imagination confronts the domination of the Chilean nation-state, generating meanings oriented toward conflict and cultural renewal (Gallegos, 2021, p. 566).

2.1. Political Ecology

The field of political ecology is the study of the relationships between nature, culture, and technology. It is concerned with the power conflicts that arise from the appropriation of resources. In Latin America, there is an ongoing search for a paradigm shift toward a political ethic that values sociocultural diversity and rejects domination and hierarchization (Leff, 2003). This approach acknowledges the pervasive interconnectedness between nature and society, positing that both are inextricable components of a unified whole, forged through the shared lens of social imaginaries (Ruíz, 2021, p. 737).

Power is a fundamental aspect of political ecology, and its analysis entails three primary perspectives. Firstly, power is regarded as a resource that is distributed unevenly among actors. Secondly, power is understood as domination, which exposes economic structures marginalize certain groups while benefiting others. Thirdly, biopolitical power is examined, which involves the study of how disciplinary institutions, such as the state, control social life (Ahlborg & Nightingale, 2018; Svarstad et al., 2018). The power dynamics that underpin environmental and water crises are of fundamental importance.

The environmental crisis is widely regarded as a manifestation of the crisis of Western civilization, which is characterized by capitalism and neoliberalism. The process of commodifying nature and water has resulted in the dispossession of common goods and the reinforcement of an inequitable global system (Ávila-García, 2016).

According to Estenssoro (2021), this crisis is not merely technical or demographic; rather, it is fundamentally political, originating in a system that perpetuates inequalities and requires crises for its functioning (Farias, 2023). In addition to the tenets of political ecology, the crisis demands methodologies such as environmental epistemology and Andean or Amazonian ontology (Carrasco, 2020, p. 36; Núñez et al., 2023, p. 119).

Consequently, the development of a novel environmental rationality, founded on alternative epistemologies including those of the Andes and the Amazon—is imperative. These epistemologies should integrate local knowledge and prioritize ethics and feelings.

This approach endeavors to transcend anthropocentrism and promote holistic development, thereby effecting a transformation in the prevailing social, economic, and political structures (Blanco-Wells & Gunther, 2019; Torres, 2016). Consequently, environmental and water crises will not be postponed, rejected, or hidden through the trivialization of evil (Espinosa, 2022, pp. 152–154), thereby avoiding the mere pursuit of human satisfaction at the expense of well-being and self-destruction (Macedo, 2019).

2.2. Environmentalism of the Poor

The environmentalism of the poor, which emerged from peasant resistance movements in 1985, addresses socio-environmental conflicts generated by social inequality and economic growth. The text focuses on issues such as water pollution, unequal access to natural resources, and the environmental liabilities of mining (Goebel-McDermott, 2010; Martínez-Alier, 2021).

This approach underscores the concept of ecological debt and distributional conflicts, wherein economic elites benefit from environmental capital while marginalized sectors, such as peasants and indigenous peoples, bear the environmental costs (Goebel-McDermott, 2010; Quispe-Mamani et al., 2022). However, it is not solely the economic disadvantaged who are considered to be "people of the ecosystem;" rather, it is all individuals whose economic well-being and health are intertwined with their habitat (Folchi, 2019).

Ecological inequality is employed as a mechanism for social control through the commodification of natural resources and the judicialization of society-nature relations (Prieto, 2016). In response to these challenges, social movements have emerged in the defense of water and other common goods. For instance, social movements in Spain and Argentina are confronting the impacts of neoliberal governance and industrial agriculture, respectively (Carrizo et al., 2016, p. 133; Schmidt et al., 2023; Van den Berge et al., 2023).

The environmentalism of the poor also integrates

river ontologies.

According to Boelens et al. (2023), river ontologies consider rivers and lagoons as eco-societies, hydrosocial territories, subjects, and movements. These ontologies facilitate the comprehension of socio-natural entities as intricate systems that articulate social, cultural, political, and economic dimensions. This approach is fundamental in the struggle for water justice, where local actors shape strategies for governance and mobilization at different scales, as seen in the eco-sociopolitical processes surrounding the Umayo lagoon.

3. MATERIALS AND METHODS

The methodology employed in the present study was founded upon a qualitative approach (Hernández-Sampieri & Mendoza, 2018) and Grounded Theory design, whose methodological strategy is constant comparative analysis. This strategy is employed to identify concepts and categories to be applied in coding, thus establishing a coherent relationship between data and theory (Estrada-Acuña et al., 2021).

The study population was identified through a non-probability convenience sample, supplemented by the snowball technique, which enabled the selection of 35 key informants, including community members, agricultural producers, community leaders, and local authorities from the area surrounding the study area.

The research techniques applied in the field data collection process included document review, which allowed for the collection of prior information on the subject under investigation; semi-structured interviews, to identify the subjectivities (feelings and thoughts) of the actors; and focus groups, to record the intersubjectivities of the actors (Valles, 1999; Hernández-Sampieri and Mendoza, 2018).

Data processing and analysis were carried out in five phases: in the first phase, interviews and focus groups were recorded on audio, which have been manually transcribed into Word documents, these have been read and edited by the research team to assess the quality of the data collected. In the second phase,

The qualitative data were processed using Atlas.ti v8.4 software (Barquín et al., 2022; Quispe-Mamani & Ayamamani-Collanqui, 2023), which allowed us to systematize, code, and categorize the qualitative data generated from the central theme, whose conceptualization and integration in the form of theory enabled us to interpret the phenomenon under study (Pertegal-Felices et al., 2020; Quispe-Mamani et al., 2023).

In the third phase, through constant comparative analysis and thanks to the coding process, the research team identified 479 quotes, distributed and grouped into four main categories of social imaginaries of actors, previously identified, and into a differentiated number of emerging subcategories of analysis.

In the fourth phase, after identifying representative quotes for each emerging subcategory of analysis, semantic networks were designed for each main category of analysis of social imaginary. In the fifth phase, the results of the study were analyzed, discussed, and interpreted using qualitative content analysis and discourse analysis techniques (Quispe-Mamani et al., 2023).

In addition to the methodology outlined above, the perspective of the imaginaries and practices of local actors is adopted as a model/method for analyzing and interpreting the environmental and water crisis experienced by the high Andean communities of Puno, Peru.

From a methodological perspective, social imaginaries are oriented toward analyzing the problem of social order and are conceived as socially constructed and differentiated schemas, whose entity has a high degree of abstraction, based on multiple truths, and focus their analytical attention on the feelings and thoughts (perceptions), social meanings (interpretations), and actions/behaviors of the actors: processes of social intervention (Pintos, 2005).

With regard to feelings, according to Weber, major ways of life are deeply influenced by non-rational assumptions that become integrated into everyday culture and generate a "sensible reason" (Maffesoli, 2022). This reason allows us to grasp the essence of the social through emotions, passions, and a holistic sensibility that connects with myths and dreams. In postmodern societies, sociality is shaped more by attractions and emotions than by rational contracts, giving the imaginary a central role in shaping social life.

Thoughts, in Peirce's terms, are a psychic construction elaborated through signs and symbols that allow the subject to interpret and structure social reality (Ramírez & Aliaga, 2022). From symbolic interactionism, Mead and Blumer argue that social reality develops in individual and collective consciousness. This process occurs through infinite semiosis, where language and sign's structure universes of meaning, establishing constant associations between subjects and their environments (Ramírez & Aliaga, 2022; Ritzer, 1993).

In contrast to thoughts, social meanings are present in everything that surrounds the subject,

including individuals themselves, conceived as developing signs (Ramírez & Aliaga, 2022). Verón's (1993) social semiosis addresses social phenomena as processes of meaning production through communication and interaction. In Foucault's words, modern societies deploy meanings linked to policies of truth and regimes of power, in which discursivity mediates social relations and shapes the dynamics of signification (García, 2020).

Weber's social action is guided by symbolic meanings based on the present or future actions of others. It can be classified as: (1) rational with ends, based on expectations and means to achieve goals; (2) rational with values, guided by ethical or religious beliefs; (3) affective, determined by emotions; and (4) traditional, influenced by custom (Arzuaga, 1994).

However, Weber emphasizes that real action is usually semi-conscious or unconscious, shaped by instincts, habits, and feelings rather than fully conscious reasons, highlighting the irrationality underlying much of human behavior.

In the following section, we proceed to delineate the epistemic and socio-natural reality that has emerged around the Umayo lagoon, shaping eco-socio-political processes within the hydro-social territory. This delineation is based on the model for analyzing the imaginaries and social practices of local actors. The study introduces the category of analysis referring to eco-socio-political practices and processes.

These practices and processes are understood as complex dynamics that articulate social, ecological, and political transformations. These transformations are shaped by social meanings, power relations, and resistance to the environmental crisis. From the perspective of social imaginaries, this involves the construction and reconfiguration of meanings that guide human practices around nature (Castoriadis, 2007; Leff, 2010).

Concurrently, political ecology addresses the power relations that structure the appropriation and governance of common goods, promoting environmental justice through an ethic of diversity (Ruíz, 2021). Conversely, the environmentalism of the impoverished underscores the challenges faced by marginalized communities in safeguarding indigenous knowledge and the rights of nature, particularly in the context of commodification and prevailing global and local inequalities (Boelens et al., 2023; Martínez-Alier, 2021).

4. RESULTS AND DISCUSSION

4.1. Local Actors' Feelings about the Environmental and Water Crisis

Feelings are defined as dual or even dichotomous emotional states that arise in response to certain situations or events and are expressed as anger, rejection, fear, anxiety, sadness, joy, discouragement, enthusiasm, pessimism, optimism, etc. (Marteau, 2017; Tang et al., 2016).

As illustrated in Figure 1, the emotional states expressed by local actors pertain to anxiety, fear, and sadness in the face of the effects of pollution of the main water source in their habitat. As argued by Iwasa, Uchida, and Yokomizo (2007), a high level of pollution in the lagoon increases social anxiety about threats and damage to animal and plant life and human health.

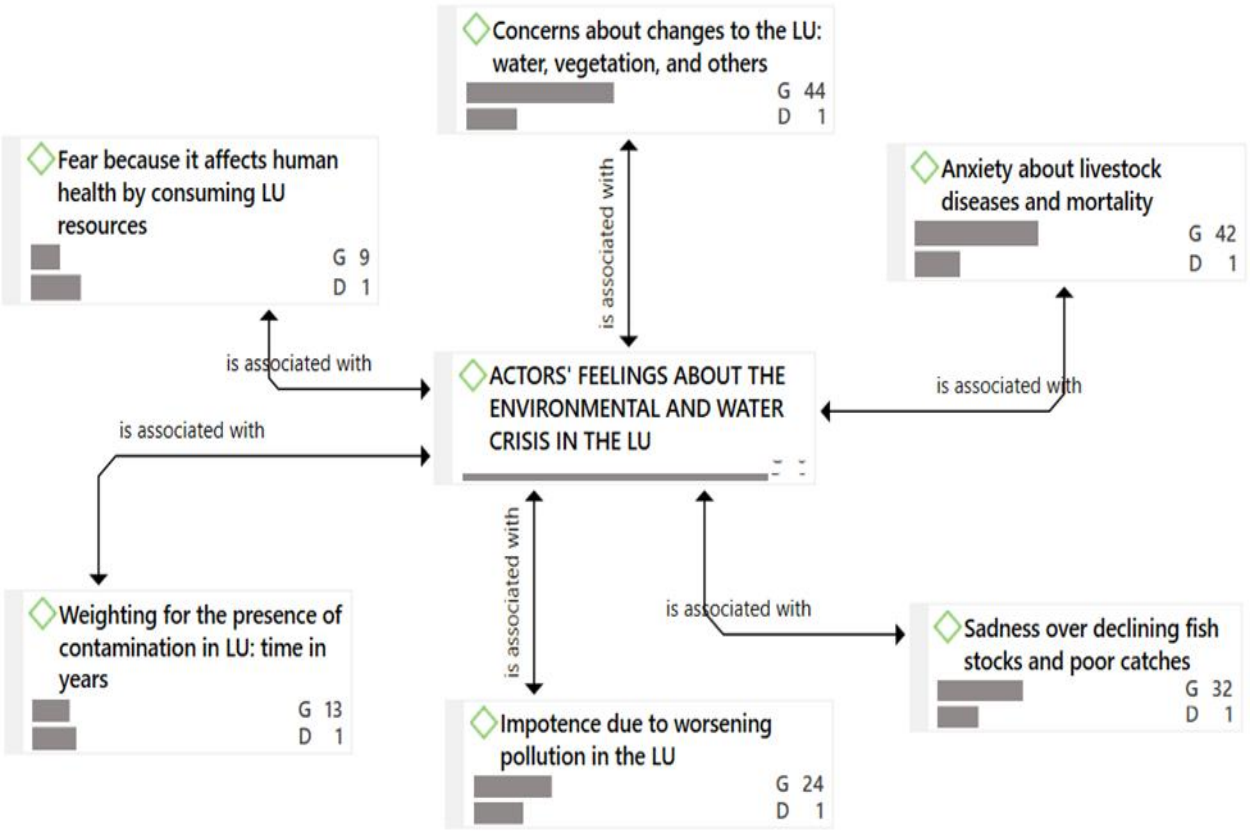
The results of the study indicate the emergence of problematic situations that reflect the environmental and water crisis in the LU environment. This is manifested in the feelings of concern, anxiety, and sadness of the actors due to the rapid changes that have occurred in the lagoon in recent years.

Deep in the minds of local actors lies a sensitive rationale expressed in concerns about negative changes in the characteristics of the lagoon, translating into anxiety and sadness over disease, livestock mortality, and a reduction in aquatic species, with harmful effects on human health. These profound social imaginaries are shaped by the exposure of humans and non-humans to chronic environmental contamination, including life on soil contaminated with heavy metals.

This exposure instigates protracted anxiety, engendering substantial physical symptoms (e.g., pain and fatigue), immune system impairment, and consequently, interference with the quality of life of the inhabitants (Tang et al., 2016). This socio-environmental dynamic has been driving eco-socio-political practices from the territory, based on the promotion of radical and instituting social imaginaries, in search of a solution to the environmental and water crisis in the LU area.

In a given society, the uniqueness of social actors gives rise to deep imaginaries that reflect multiple truths (Randazzo, 2012). However, as socio-environmental phenomena that cut across collective interests or common goods take shape over time, they give rise to the configuration of established social imaginaries, and social cohesion and legitimacy arise around them (Baeza, 2000). This has been the case with the environmental and water crisis in the LU.

Figure 1: Semantic Network Of Actors' Sentiments Regarding The Environmental And Water Crisis In The Umayo Lagoon.



Source: Own Elaboration.

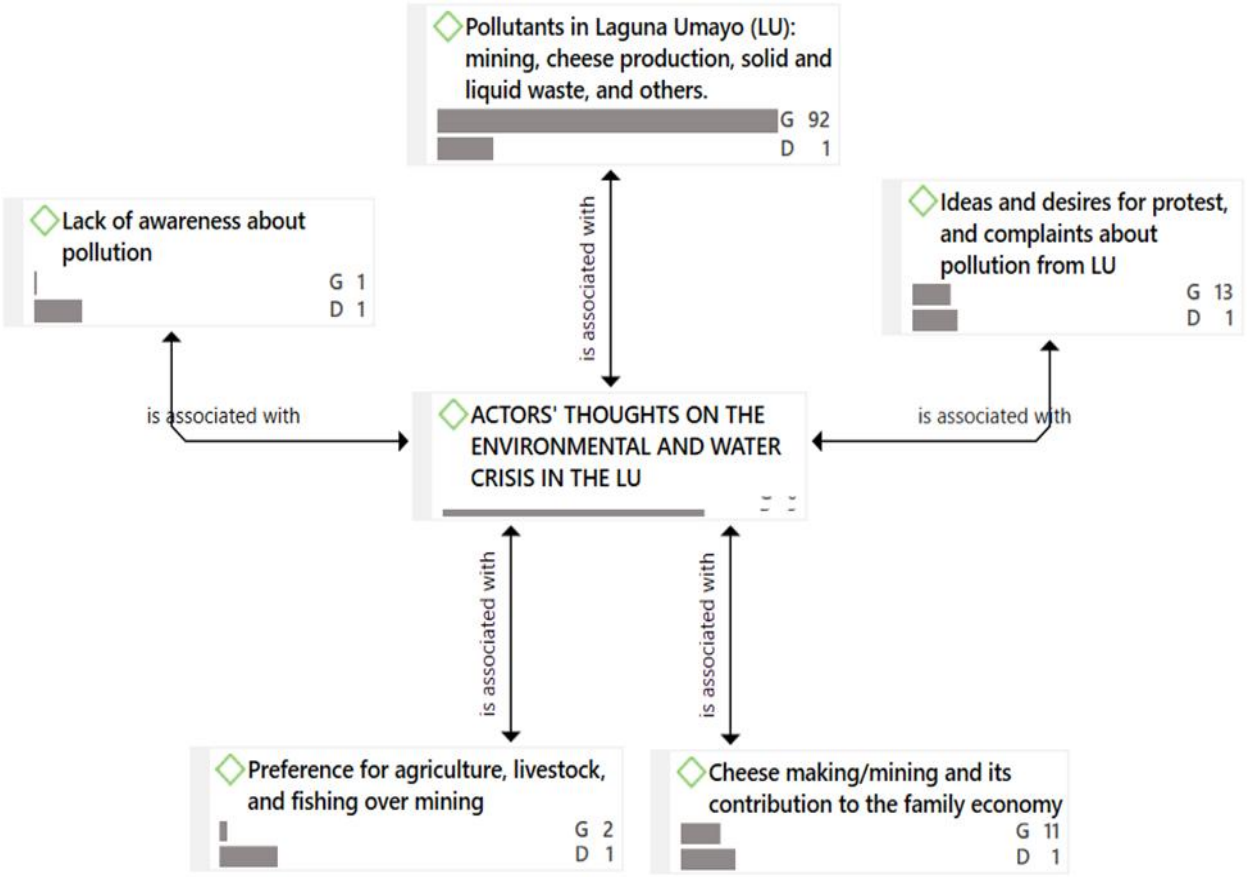
The multiple truths surrounding the environmental and water crisis in the LU are evident in the subjectivities and intersubjectivities of each of the sociocultural, economic, and political actors in the territory. This is because each of the actors involved adopts a different position on the socio-environmental phenomenon based on their interests, objectives, and responsibilities (Castoriadis, 2007; Habermas, 1999; Leff, 2003). These multiple truths in the hydrosocial territory are supported by Andean ontology, based on harmony between the human and non-human. This Andean worldview, in turn, contrasts with the single vision of Western capitalist rationality, based on maximization and economic utilitarianism with regard to nature.

4.2. Local Actors' Thoughts on the Environmental and Water Crisis

Given that thoughts are ideas that originate in the human mind, as a subjective and psychic construct, social reality is constructed and elaborated in the consciousness of the subject (thought), through meaningful signs and symbols (Ramírez & Aliaga, 2022; Ritzer, 1993). Thus, according to Figure 2, the ideas developed by local actors about the environmental and water crisis in the LU revolve around the sources of pollution produced by mining, cheese production, and inadequate disposal of solid and liquid waste (E=92). Heavy metals, by their nature, have the potential to dissipate through various pathways in the environment; in addition, abandoned mines and mining tailings represent a permanent legacy of environmental pollution long after the commercial exploitation of minerals (Hjeresen, 2001). Similarly, the artisanal cheese industry generates pollution through lacto-serum, odors, carbon particles, and excessive water use (Flores, 2020).

On the other hand, worldwide, the inadequate disposal and elimination of solid waste is perceived as the most visible practice of environmental pollution, in addition to unsustainable agricultural methods based on the use of pesticides and chemical fertilizers (Ojedokun, 2011; Okumah, Yeboah, and Asante-Wusu, 2020).

Figure 2: Semantic Network of Actors' Thoughts on the Environmental and Water Crisis in the Umayo Lagoon.



Source: Own Elaboration.

Over the past three decades, the social imaginaries of local actors have been shaped by the logic of the market economy, which promotes economic activities that generate income for family subsistence. This has resulted in the overexploitation and degradation of non-human nature by humans (Núñez et al., 2023). The neoliberalization of nature and water has profoundly influenced the social imaginaries of local actors, as evidenced by the commodification of nature and its impact on common goods (Ávila-García, 2016).

Nevertheless, despite the contributions of mining and cheese production to the economy of certain peasant families, the social imaginary of high Andean communities is rooted in a long-standing tradition of socioeconomic and cultural production and reproduction based on agriculture, livestock, and fishing. Consequently, local stakeholders have reaffirmed their commitment to this social imaginary, articulating a predilection for the advancement of economic activities within the region over extractive endeavors that have precipitated the environmental and water crisis in the LU.

4.3. Meanings Attributed By Local Actors to the Environmental and Water Crisis

In the context of social imaginaries, social reality is constructed from semiotic processes or social meanings, that is, the social world is mediated by a diverse set of meaningful signs and symbols that enable communication and social interaction through the production of meaning and significance in social action processes (Ritzer, 1993; Arzuaga, 1994; Ramírez and Aliaga, 2022). Social imaginaries, as such, are processes of social construction of social meanings and significances of something or someone (Gallegos, 2021), they are socialized symbolic constructs and webs of meanings that enable everyday social praxis (Riffo-Pavón, 2022a; Riffo-Pavón, 2022b), therefore, humanity is the history of the social meanings and significance it attributes to its everyday practices (García-Muñoz and Gómez-Gallego, 2021).

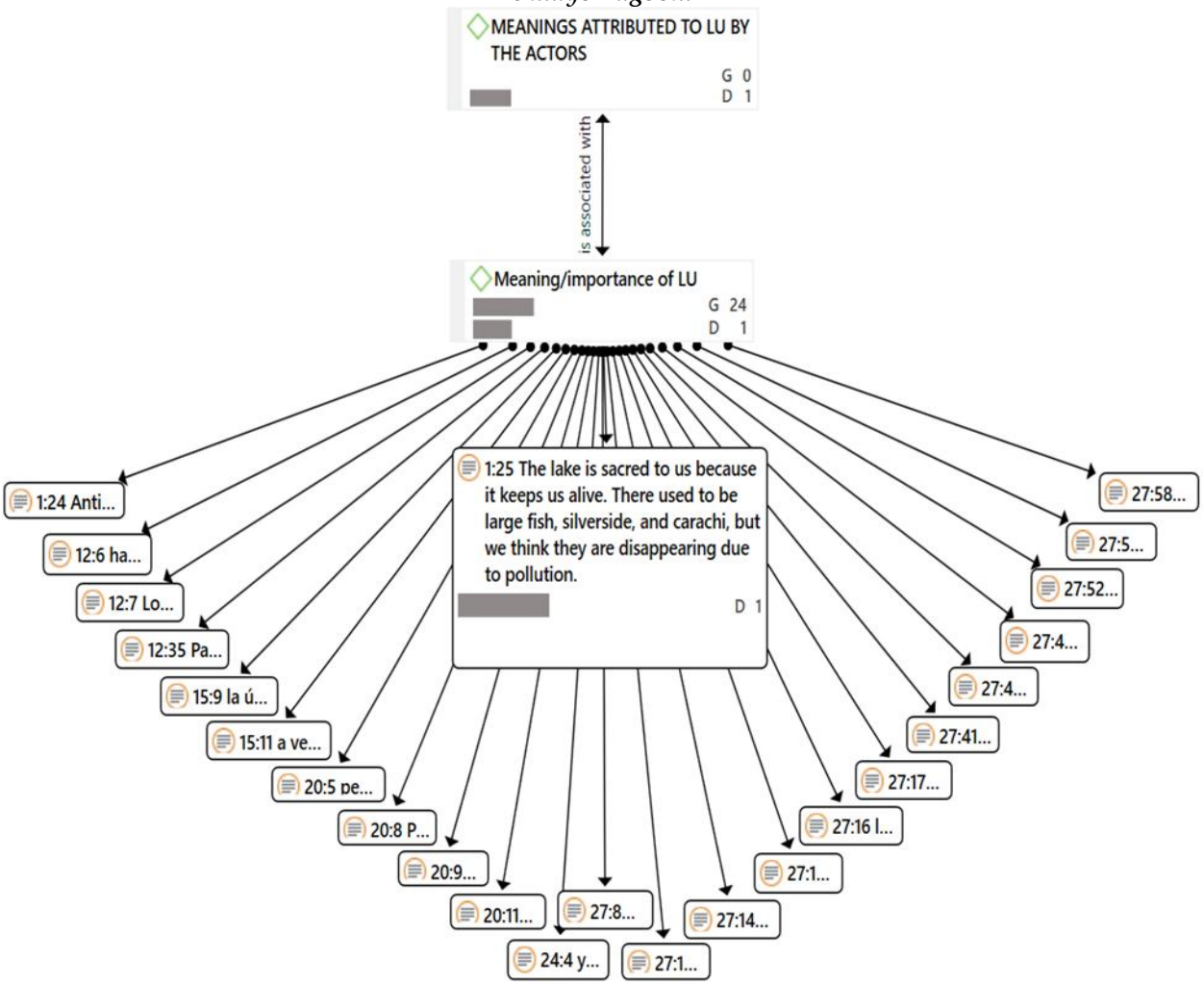
In line with the above, Figure 3 depicts the

established social imaginary of human life and subsistence; that is, for local actors, LU gives meaning and significance to their being and existence. Hence, the environmental and water crisis surrounding the main water source of the high Andean communities has meant the breakdown of the socio-environmental, cultural, economic, and political dynamics (Quispe-Mamani, et al. 2022). In this context, the radical imaginary of the actors emerges as a mechanism of resistance, decolonization, and transformation of that reality. The rupture of the socio-natural dynamics in the hydrosocial territory represents an attack on the existence of the human species and, therefore, translates into a civilizational crisis: an epistemological and ontological crisis regarding the existence of the human and the non-human (Carrasco, 2020; Farias, 2023).

However, the severity of this civilizational crisis, as an endemic evil, is trivialized and banalized (Espinosa, 2022), responding solely to the satisfaction of personal and particular interests, leading to the self-destruction of the human species itself.

All of this complex socio-environmental dynamic has driven the development of eco-socio-political practices by community and local actors aimed at reclaiming the LU and its tributaries as a socio-natural entity or subject in the hydrosocial territory (Boelens et al., 2023), with the aim of revaluing and recovering from the situation of degradation and environmental crisis that it has been experiencing in recent years.

Figure 3: Semantic Network of Meanings Attributed By Actors to the Environmental and Water Crisis in the Umayo Lagoon.



Source: own elaboration.

The pursuit of satisfaction for specific desires aligns with the logic of capitalist instrumental rationality (Macedo, 2019), a doctrine that prioritizes the appropriation, consumption, exploitation, and reckless destruction of nature. In this sense, the contamination of the LU has meant the adoption of instrumental rationality on the part of economic, political, and social agents. Confronted with this reality, political ecology proposes a revaluation of the virtues of the human species. This revaluation is based on new political thinking and a new political ethic. The aim of this revaluation is to renew the meaning of life. It seeks to do so through structural transformations in the social, political, economic, and cultural organization of its environment (Leff, 2003; Blanco-Wells and Gunther, 2019). Furthermore, this phenomenon must be addressed from the perspective of post-human geographies (Núñez et al., 2023).

In addressing the environmental and water crisis in the LU from a post-human geography perspective, it is essential to shift from the prevailing anthropocentric approach that has guided the logic of the binary relationship between humanity and nature in capitalist instrumental rationality. Instead, a multidimensional logic of biodiversity management should be adopted, whereby the LU and its tributaries are regarded as an eco-society, a hydrosocial territory, a subject, and a movement (Boelens et al., 2023). According to this approach, socio-natural entities or subjects must be regarded as the components that energize and give meaning and significance to life in the hydrosocial territory. In summary, this approach is consistent with the logic of Andean ontology and worldview. According to this view, the performance and behavior of socio-natural or socio-environmental elements or components are reciprocal and interact in harmony with each other (Bustamante-Cabrera et al., 2023; Yana-Salluca et al., 2024)

In other words, from the perspective of political ecology, complemented by post-human geographies, addressing the environmental and water crisis in the LU means adopting a new political and ecological ethic and behavior on the part of actors and agents at different territorial levels. Where there is no predominance or unilateral imposition of any of the elements or components of socio-environmental dynamics; rather, the performance of each of the parties constitutes the configuration of balanced and equitable eco-socio-political practices in the socioeconomic, environmental, and cultural reproduction of the territory.

4.4. Actions Taken By Local Actors in Response to the Environmental and Water Crisis

Given that the social action of actors is influenced by both rational and irrational factors, two types of social behavior can be identified in the social imagination of local actors (Figure 4). First, the majority tendency revolves around inaction and apathy on the part of actors at different territorial levels in addressing the environmental and water crisis in the LU. This behavior of the actors would be conditioned by the metapsychological dimension, according to which humanity trusts in the principles and values of Western civilization based on instrumental rationality, equipped with science, technology, and a regulatory state; however, these attributes are far from the reality of the environmental crisis the world is experiencing. Furthermore, despite the seriousness of this crisis, evil is trivialized and banalized (Espinosa, 2022; Farias, 2023). These metapsychological behaviors of political and economic actors have been reproduced and normalized at different levels and in different spheres of global society. This is reflected in the apathy of institutional actors towards the problems experienced by communities in the LU environment.

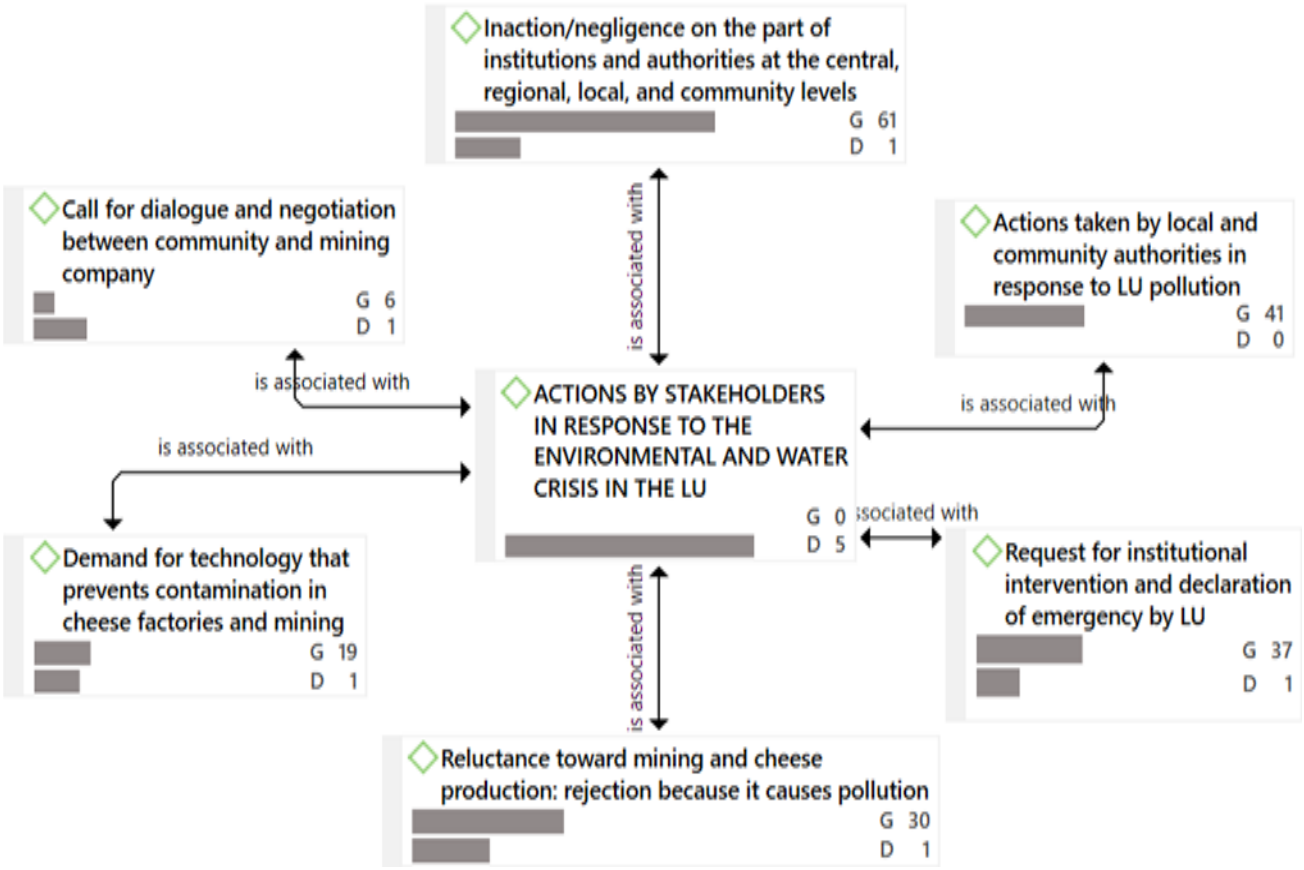


Figure 4. Semantic Network of Local Actors' Responses to the Environmental and Water Crisis in the Umayo Lagoon.

Source: Own Elaboration.

The second trend in the social behavior of local actors in response to the environmental and water crisis is characterized by demands and requirements that social actors impose on institutional actors. These demands include the proposal of emergency measures, the prioritization of life over extractive and degrading activities, the initiation of social-business dialogue, and the utilization of technology to reverse the environmental and water crisis in the LU area. Consequently, pro-environmental behaviors manifest only when a certain level of environmental awareness is attained, and when concerns regarding resource depletion and threats to personal health and life are recognized (Iwasa, Uchida, and Yokomizo, 2007; Bakhrani, 2016).

The high Andean communities situated in proximity to the LU, which are predominantly economically disadvantaged and marginalized, have been particularly adversely affected by the deleterious consequences and burdens associated with environmental pollution (Folchi, 2019). Consequently, despite the absence of explicit influence on the radical institutional imaginary (laguna as a movement), the testimonies of these communities underscore the imperative to address the crisis from the perspective of the LU as an eco-society, a hydrosocial territory, and a subject. (Boelens et al., 2023).

As an eco-society, the LU is composed of socio-natural systems such as hydrology, ecology, microclimates, and Andean culture, in a spatial and temporal context where they converge or conflict with extractive industries and hydrocracies at the local, regional, and national levels. On the other hand, as a hydrosocial territory, complex interactions, conflicts, and hybrid agreements between dominant and alternative social imaginaries are configured in the LU environment, which acts as a socio-territorial control mechanism around access to and use of water resources. Thus, in the hydrosocial territory of the LU, nature, technology, and society are intertwined at the micro and meso levels, producing a territorial pluralism characterized by the diversity of interests and socioeconomic activities developed by the communities surrounding the lagoon.

Finally, as a subject in motion, processes and strategies for collective action are configured around

the LU, aimed at seeking water justice, for its vindication and recovery as a subject that articulates eco-socio-political practices: local and global water governance, vindication of voices, identities, and rights to self-determination as subjects, and collective organization and mobilization from the territory.

5. FINAL THOUGHTS

This article examines the intricate dynamics of the environmental and water crisis in the LU, situated in proximity to Lake Titi Caca in the Puno region of Peru. This crisis phenomenon emerges due to the fundamental condition for the operation of the capitalist system, at both global and local levels, being a state of crisis (Farias, 2023). Within the capitalist paradigm, crises are translated into symbolic discourses influenced by the power relations established by the actors involved. In this sense, it can be argued that the crisis phenomenon is not only ecological, technical (industrialization), or demographic in nature, but fundamentally political-ideological (Estenssoro, 2021). This has resulted in the generation of imbalanced political, economic, and cultural power relations in the world. The culmination of these imbalanced power dynamics is the implementation of a capitalist economic model driven by instrumental rationality, which has come to be known as neoliberalism. This neoliberalism has led to the commodification of natural resources and the global environment, encompassing land, water, and air (Ávila-García, 2016).

This systemic logic has led to the so-called civilizational crisis at the global and local levels. In the context of this global civilizational crisis, the present article puts forth two strategies for catalyzing the transformation of human and non-human life. First, from the perspective of Latin American political ecology, insofar as power is one of the cross-cutting dimensions of the socio-natural dynamics in the hydrosocial territory, through a libertarian project based on a new political thinking and a new political ethic aimed at renewing the meaning of life, we seek to revalue the human species in order to resolve the environmental and water crisis through structural and multidimensional transformations, in a systemic and holistic manner.

Secondly, it is crucial to acknowledge that the global civilizational crisis is a manifestation of the crisis of instrumental rationality in modern Western society. To address this crisis effectively, it is imperative to adopt an environmental epistemology. This epistemology posits that the crisis must be comprehended as a crisis of knowledge. Consequently, it necessitates a transcendence of Western epistemology, which should be replaced with the adoption of alternative ontologies, such as those found in the Andean, Amazonian, Mapuche, Aztec, Basque, Catalan, and other regions. The approach of post-human geographies is employed to understand and construct knowledge from socionatural entities (rivers and lagoons) as an eco-society, as a Catalan, and other ontologies. The approach of post-human geographies is also employed to understand and construct knowledge from socionatural entities (rivers and lagoons) as an eco-society, as a hydrosocial territory, as a subject, and as movement. From this standpoint, the promotion of socio-territorial policies congruent with the social imaginaries of the multilevel actors is imperative.

In response to this global civilizational crisis, this article proposes, from a critical Latin American perspective, an analytical model/method based on an understanding of the environmental and water crisis experienced by the high Andean communities around the LU in Puno. The present analytical model is predicated on the perspective of the eco-sociopolitical imaginaries and practices of local actors. According to this perspective, societies at the local, regional, and global levels shape their unique social meanings (instituted and instituting) around the socio-natural dynamics in the hydrosocial territory. These societies are based on their collective feelings and knowledge. They thereby undertake actions and inactions, in one direction or another, whether productive, reproductive, or assertive.

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