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# URBAN RESILIENCE BY BUILDING AND APPLYING NEW EVIDENCE IN WASH (URBAN WASH)

Peru Phase I Implementation Research Plan  
April 2024

Contract Number: GS00Q14OADUI38  
Contractor: Tetra Tech  
USAID Office: Bureau for Resilience and Food Security  
Author: Tetra Tech  
Project/Order Number: 7200AA21M00012

**April 2024**

This publication was produced for review by the United States Agency for International Development. It was prepared by Tetra Tech.

Prepared for the United States Agency for International Development by the Urban Resilience by Building and Applying New Evidence in WASH (Urban WASH) project, under the GSA's One Acquisition Solicitation for Integrated Services (OASIS Unrestricted) Indefinite Delivery Indefinite Quantity Contract (IDIQ), contract number GS00Q14OADU138 and order number 7200AA21M00012.

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Cover photo: SEDAPAR MERESE project in la Reserva Nacional de Salinas y Aguada Blanca to benefit the downstream water users of the city of Arequipa. Photo courtesy of Tetra Tech.

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## **DISCLAIMER**

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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# ACRONYMS AND ABBREVIATIONS

AAA	<i>Autoridad Administrativa del Agua (Administrative Water Authority)</i>
ALA	<i>Autoridad Local del Agua (Local Water Authority)</i>
ANA	<i>Autoridad Nacional del Agua (National Water Authority)</i>
ANP	<i>Área Natural Protegida (Natural Protected Area)</i>
COP	Chief of Party
DCOP	Deputy Chief of Party
FIAS	<i>Fondo de Inversión Agua Segura (Safe Water Investment Fund)</i>
EPS EMAPICA	<i>Empresa Municipal de Agua Potable y Alcantarillado de Ica Sociedad Anónima (Ica Water Utility)</i>
EPS Moyobamba	<i>Empresa Prestadora de Servicios de Saneamiento de Moyobamba Sociedad Anónima (Moyobamba Water Utility)</i>
EPS SEDACUSCO	<i>Empresa Prestadora de Servicios de Saneamiento Publica de Accionariado Municipal Sedacusco Sociedad Anónima (Cusco Water Utility)</i>
EPS SEDAM Huancayo	<i>Empresa Prestadora de Servicios de Saneamiento SEDAM Huancayo Sociedad Anónima (Huancayo Water Utility)</i>
FA3	Focus Area 3
GOLO	<i>Gobierno Local (Local Government)</i>
GORE	<i>Gobierno Regional (Regional Government)</i>
IWRM	Integrated Water Resources Management
KII	Key Informant Interview
LMIC	Lower- and Middle-Income Country
MERESE	<i>Mecanismos de Retribución por Servicios Ecosistémicos (Payment Mechanism for Ecosystem Services)</i>
MIDAGRI	<i>Ministerio de Desarrollo Agrario y Riego (Ministry of Agricultural Development and Irrigation)</i>
MINAM	<i>Ministerio del Ambiente (Ministry of Environment)</i>
MVCS	<i>Ministerio de Vivienda, Construcción y Saneamiento (Ministry of Housing, Construction, and Sanitation)</i>
NGO	Nongovernmental Organization
NIWS	USAID/Canada-funded Natural Infrastructure for Water Security
PDLC	<i>Plan de Desarrollo Local Concertado (Concerted Regional Development Plan)</i>
PDRC	<i>Plan de Desarrollo Regional Concertado (Concerted Local Development Plan)</i>
PEN	Peruvian Soles
PES	Payment for Ecosystem Services

PGRHC	<i>Plan de Gestión de Recursos Hídricos (Water Resources Management Plan)</i>
PI	<i>Plan de Intervenciones (Plan of Interventions)</i>
PMO	<i>Plan Maestro Optimizado (Optimized Master Plan)</i>
PROFONANPE	<i>Fondo de Promoción de las Áreas Naturales Protegidas del Perú (Peruvian Trust Fund for National Parks and Protected Areas)</i>
SEDA Ayacucho	<i>Servicio de Agua Potable y Alcantarillado de Ayacucho Sociedad Anónima (Ayacucho Water Utility)</i>
SEDAPAR	<i>Servicio de Agua Potable y Alcantarillado de Arequipa Sociedad Anónima (Arequipa Water Utility)</i>
SERFOR	<i>Servicio Nacional Forestal y de Fauna Silvestre (National Forestry and Wildlife Service)</i>
SERNANP	<i>Servicio Nacional de Áreas Naturales Protegidas por el Estado (National Service of Natural Areas Protected by the State)</i>
SUNASS	<i>Superintendencia Nacional de Servicios de Saneamiento (National Superintendency of Water and Sanitation Services)</i>
TWG	Technical Working Group
URBAN WASH	Urban Resilience by Building and Applying New Evidence in WASH
USAID	United States Agency for International Development
WASH	Water, Sanitation, and Hygiene

# EXECUTIVE SUMMARY

There is a general consensus that source water protection helps build urban water supply resilience (UN WWAP/UN-Water 2018; Abell et al. 2017; Matthews et al. 2019). While not a widespread practice in most lower- and middle-income countries (LMICs), Latin America is home to a growing number of self-driven and locally financed source water protection programs. In Peru, decision-makers are attempting to scale up source water protection nationwide to address the numerous water security challenges brought on by climate change, watershed deterioration, water pollution, and a lack of storage infrastructure. In the past decade, Peru has established a robust national legal and financial framework for source water protection; however, the country still lacks widespread implementation.

Understanding how and why actors within financing and implementing institutions decide to implement source water protection is critical to the design and support of these source water protection programs and interventions (Lima et al. 2019). The type of information needed to drive implementation and further investments and to overcome barriers hinges on what those incentives and motivations are.

The research objective of this study is to understand what drives key decision-makers to undertake source water protection for urban water supply resilience. This implementation research aims to address the following question and sub-questions:

- Why are some cities able to undertake widespread source water protection while others are not?
  - How does implementation of source water protection compare between cities?
  - How do the different actors within the cities consider the different impacts, financial benefits, and costs associated with source water protection?
  - How do actors' incentives and motivations differ from one another and between cities?
  - How have the drivers for source water protection changed over time?
  - What are the barriers to implementing source water protection, and how are cities addressing them?

The data collection and analysis will take place in stages. First, secondary data will be collected and used to refine and customize the semi-structured interview guides to the specific participants and finalize the list key informants in the five selected cities (Arequipa, Ayacucho, Cusco, Huancayo, and Ica). Simultaneously, the USAID/Urban Resilience by Building and Applying New Evidence in Water, Sanitation, and Hygiene (URBAN WASH) Activity will conduct several key informant interviews (KIIs) to fill any gaps in the secondary data and better understand the historical contexts of study cities. In the second stage, URBAN WASH will conduct in-person semi-structured interviews with various national, regional, and local actors (i.e., investors and decision-makers) involved with past and/or future financing and implementation of source water protection interventions, analyze the data, and report out in a Phase I dissemination event and Phase I research brief.



## I.0 RESEARCH OBJECTIVES

The research objective is to understand what drives key national, regional, and local decision-makers to undertake source water protection for urban water supply resilience. We focus on Peru, where there is a robust national legal and financial framework for source water protection but still lack widespread implementation. This implementation research aims to address the following research question:

- Why are some cities able to undertake widespread source water protection while others are not?
  - How does implementation of source water protection compare between cities?
  - How do the different actors within the cities consider the different impacts, financial benefits, and costs associated with source water protection?
  - How do actors' incentives and motivations differ from one another and between cities?
  - How have the drivers for source water protection changed over time?
  - What are the barriers to implementing source water protection and how are cities addressing them?



## 2.0 BACKGROUND

Although Peru is the eighth-most water-rich country in the world (and the third in Latin America) in terms of freshwater quantity, these freshwater resources are unevenly distributed among Peru's three major hydrographic regions (Pacific, Atlantic, and Titicaca), with less water available in the more populous regions (OECD 2021). This mismatch between water availability and demand is exacerbated by climate change, which will continue to increase temperatures and change rainfall patterns (Llaca Rodríguez et al. 2021). Peru is also highly vulnerable to natural disasters such as droughts, floods, and landslides that are associated with long-term climate change and the El Niño phenomenon. Climate models, which consider a range of climate scenarios, project accelerated glacial retraction in the Andes, which will threaten mountain water resources and the downstream populations that rely on them (Potter et al. 2023; Somers et al. 2019; Mark et al. 2017). Continuous deterioration of watersheds, water pollution, and a lack of storage infrastructure further compound water security challenges in the country (World Bank 2023).

### 2.1 SOURCE WATER PROTECTION IN PERU

Source water protection is one key element of ensuring Peru's water security. Source water protection refers to activities and actions intended to safeguard, maintain, or improve present and potential sources of drinking water and their contributing areas. Beyond the primary goal of providing high-quality source water, source water protection programs may strive to reduce or limit sources of contamination, increase infiltration, mitigate effects of natural disasters, improve resiliency of the water supply system, comply with regulatory requirements, and minimize water treatment costs. Some examples of source water protection interventions include riparian restoration, natural infrastructure, educational campaigns, sustainable land management practices, spring and wellhead protection, and watershed conservation.

Implementation of source water protection is a multi-step process that can take years. In the context of Peru, regardless of funding sources (i.e., public funding or water user tariffs), "implementation" requires 1) planning and budgeting, 2) receiving funding approval, 3) collecting funds, 4) selecting and refining the intervention, 5) choosing the procurement method and negotiation, and 6) executing the intervention.

Protecting source water at scale requires **legal frameworks, financing, and implementation**. Starting two decades ago, Peru began developing the necessary laws. Peru now has a comprehensive legal framework that prioritizes source water protection under the auspices of integrated water resources management (IWRM). More recently, Peru developed a dedicated financial mechanism.

Despite having the legal framework and multiple funding streams, Peruvian cities (and their actors) are struggling to implement source water protection interventions. Peru continues to struggle to implement its robust IWRM legal framework largely due to its weak complementary institutional framework, characterized by an ineffective IWRM multi-sectoral coordination platform and the insufficient technical and human capacity of Peru's institutions (OECD 2021; World Bank 2023). In practice, this results in complex relationships that lead to overlaps and grey areas in regulations and implementation, especially in the wake of Peru's decentralization reform.

Implementation in a decentralized system is difficult because the effective protection of water sources requires robust collaboration among regional and local actors. Joint initiatives, regular communication channels, and shared resources are needed to ensure a cohesive approach that addresses challenges at both regional and local levels to achieve comprehensive and sustainable protection of water sources. However, these regional and local actors have different missions, budget cycles, and other factors that present challenges to how they work together. Because a large component of source water protection

involves improved land management, conservation, and ecosystem restoration, source water protection financing and implementation includes both water laws and actors and land management laws and actors, which adds to the number of actors involved and creates more coordination challenges. The landscape is further complicated by the presence of other actors (e.g., nongovernmental organizations [NGOs] and private sector actors) who receive little oversight. Legal regulations require the establishment of different sub-national coordination platforms, which vary according to their scale (e.g., basin, watershed, city, etc.) and configuration of members; however, roll out has been slow, and most platforms are underfunded and cannot perform their duties.

The laws allowing these diverse actors to act, and restricting what they can do, as well as the legal and budgetary authorities that empower and restrict them, are laid out below, followed by a subsection that introduces the actors involved with implementing these laws and provides further details on their responsibilities related to source water protection. Funding sources for source water protection interventions and their implementation status in Peru are explained in the subsequent section.

## 2.2 LEGAL FRAMEWORK FOR SOURCE WATER PROTECTION IN PERU

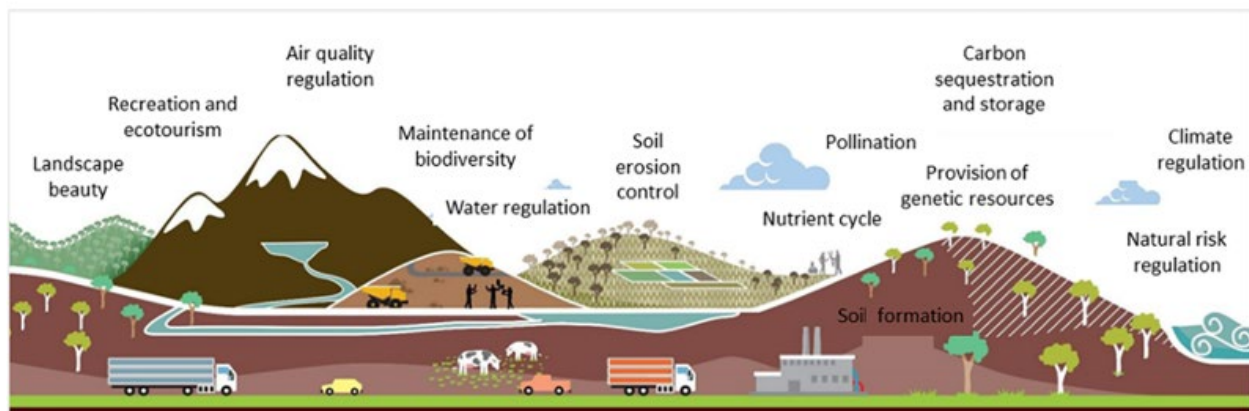
In 2009, the Peruvian government formally adopted an IWRM approach and simultaneously made source water protection a national priority with the **Water Resources Law** (*Ley de Recursos Hídricos No. 29338*). Article 75 states that, “The National Authority (National Water Authority [*Autoridad Nacional del Agua*, ANA]), with the opinion of the Watershed Council, must ensure the protection of water, which includes the conservation and protection of its sources, ecosystems and natural assets associated with it within the framework of the Law and other applicable regulations. For this purpose, it can coordinate with the competent public institutions and the different users” (*Ley de los Recursos Hídricos 2009*). It outlines ANA’s various responsibilities for protecting the nation’s water sources (e.g., regulating wastewater discharges and reuse and declaring zones where water cannot be diverted or disposed of) as well as those of other actors, like regional governments (*Gobiernos Regionales*, GOREs). Under this law, GOREs are responsible for creating Watershed Councils (*Consejos de Cuenca*) by supreme degree. The Water Resources Law also gives GOREs and local governments (*Gobiernos Locales*, GOLOs) authority to “intervene in” the preparation of water resources management plans (*plan de gestión de recursos hídricos*, PGRHC), participate in the Watershed Council, and carry out control and surveillance actions, in coordination with ANA, to ensure the sustainable use of water resources in their respective regions.

Another important law that addresses the responsibilities of GOREs with respect to source water protection is the 2002 **Organic Law of Regional Governments** (*Ley Orgánica de Gobiernos Regionales No. 27867*) and its amendments. Overall, the Law establishes the competencies and functions of GOREs to promote comprehensive sustainable regional development by encouraging public and private investment. Thus, they promote and execute projects for the proper management of water and soil resources. With respect to source water protection, the law focuses on the responsibilities of GOREs for cultivated lands, which include participating in the sustainable management of water resources within the basin framework and ANA’s policies, and designing and executing regional programs for watersheds, economic corridors, and intermediate cities (*Ley Orgánica de Gobiernos Regionales 2002*). Together, these two laws provide the legal basis for GOREs and GOLOs to exercise authority over the management of water resources and in investment and implementation of interventions for protection of water sources.

The 2013 **Sanitation Services Modernization Law** (*Ley de Modernización de los Servicios de Saneamiento No. 30045*) establishes the precedent for the pivotal roles that water utilities and the national regulator, the National Superintendence of Water and Sanitation Services (*Superintendencia Nacional de Servicios de Saneamiento*, **SUNASS**), currently have in source water protection in Peru (Loyola 2022; Tristán et al. 2022). The law requires that water utilities and the national regulator

establish environmental compensation and watershed management mechanisms in their Optimized Master Plan (*Plan Maestro Optimizado*, PMO). However, expending public funds on this was not explicitly authorized (Coxon, Gammie, and Cassin 2021).

This gap was addressed with the development of a national payment for ecosystem services (PES) mechanism, called the Ecosystem Services Compensation Mechanism (*Mecanismo de Retribución por Servicios Ecosistémicos*, MERESE), which is based on voluntary agreements between payers (*retribuyentes*) and providers (*contribuyentes*). Fueled by the popularity and success of previous PES interventions,<sup>1</sup> the 2014 **MERESE Law** (*Ley de mecanismos de retribución por servicios ecosistémicos [MERESE] No. 30215*) was passed “to generate, transfer, and invest economic, financial, and non-financial resources through an agreement between payers and providers of the ecosystem service, with the objective of the conservation, recovery, and sustainable use of the sources of ecosystem services” (*Ley de mecanismos de retribución por servicios ecosistémicos 2014*). Public or private entities across any sector can implement MERESE. With this new mechanism, water utilities finally had the means to fulfill the requirements of the Sanitation Services Modernization Law (Elorreaga and Gammie 2022). The 2016 Regulation for the MERESE Law (Supreme Decree No. 009-2016-MINAM) provided guidance on how to promote, regulate, and supervise the design and implementation of MERESE and recognized 13 types of ecosystem services that MERESE can projects can address (see Figure 1), many of which relate to source water protection, including “water regulation” and “natural risk regulation.”



**Figure 1: 13 Ecosystem Services Recognized under the MERESE Law (Dextre et al. 2022)**

Additional legislation approved in 2016, namely the Regulation for the Sanitation Services Modernization Law (Supreme Decree No. 013-2016-VIVIENDA) and **Framework Law for the Management and Provision of Sanitation Services** (*Ley marco de la Gestión y Prestación de los Servicios de Saneamiento No. 1280*), solidified the mandate for all water utilities adopt and implement MERESE (Elorreaga and Gammie 2022; OECD 2021; Tristán et al. 2022). They specify that water utilities are authorized to develop, evaluate, approve, and execute MERESE projects and include a MERESE fee in their tariffs, which are set by SUNASS.

## 2.2.1 ACTORS AND THEIR LEGAL RESPONSIBILITIES TO PROTECT SOURCE WATER

This section presents the landscape of the national, regional, and local actors with mandates related to source water protection.

<sup>1</sup> While the Moyobama and Cusco pilots are considered the test cases for the MERESE, it is interesting to note that there were already 22 water-related PES initiatives alone in Peru before 2014, when the MERESE Law was enacted (Quintero and Pareja 2015). For more information about the origin of the MERESE Law, see the following publications: (Gammie, Coxon, and Manolis 2022; Coxon, Gammie, and Cassin 2021).

## National Ministries and Agencies

At the national level, there are three ministries and a utility regulator that have responsibilities related to source water protection: Ministry of Agricultural Development and Irrigation (*Ministerio de Desarrollo Agrario y Riego*, **MIDAGRI**); Ministry of Environment (*Ministerio del Ambiente*, **MINAM**); Ministry of Housing, Construction, and Sanitation (*Ministerio de Vivienda, Construcción y Saneamiento*, **MVCS**); and **SUNASS**.

**MIDAGRI** oversees four important agencies that work closely with source water protection. **ANA** was established in 2008 under the purview of MIDAGRI. ANA's primary mandate is to lead IWRM in Peru. In practice, this includes steering the National Water Resources Management System (*Sistema Nacional de Gestión de los Recursos Hídricos*, SNGRH), coordinating across its members, managing the National Water Resources Policy and Strategy, and developing regulations and establishing procedures for integrated and multi-sectoral management of water resources (both surface and groundwater). It is also responsible for 1) regulating the use of water resources (via water abstraction charges and the discharge of wastewater) and 2) classifying different types of water resources, which includes determining which water resources can be used for water supply. ANA and its regional (Administrative Water Authorities [*Autoridades Administrativas del Agua*, AAAs]) and local offices (Local Water Authorities [*Autoridades Locales del Agua*, ALAs]) provide localized technical support for IWRM planning and monitoring. One way they have been doing this is by developing PGRHC for all of the country's river basins, most of which include source water protection activities.

Because a large component of source water protection involves improved land management, conservation, and ecosystem restoration, the National Forestry and Wildlife Service (*Servicio Nacional Forestal y de Fauna Silvestre*, **SERFOR**), under MIDAGRI, supports source water protection while carrying out its mandate to promote the sustainable management of Peru's wild flora and fauna, including forests. MIDAGRI also oversees two executing units, Rural Agricultural Productive Development Program (*Programa de Desarrollo Productivo Agrario Rural*, **Agro Rural**) and **Sierra Azul**, which specialize in rural development and supports agricultural activities. The former concentrates on agroforestry, soil conservation, and sustainable land management projects, while the latter has years of experience implementing projects related to the gray infrastructure element of source water protection, specifically those targeting improving the reliability of water resources in the agricultural sector through water collection and storage.

**MINAM** leads the environment sector, which includes ecosystem services. It is charged with promoting the conservation and sustainable use of natural resources, biodiversity, and natural protected areas. It manages and implements the National Climate Change Strategy and System for the Monitoring of Adaptation and Mitigation Measures, which tracks the country's level of progress in the implementation of adaptation and mitigation measures. MINAM is responsible for designing, regulating, and furthering policies, legal standards, and procedures for the development, implementation, and supervision of MERESE.

MINAM also has the National Service of Natural Areas Protected by the State (*Servicio Nacional de Áreas Naturales Protegidas por el Estado*, **SERNANP**), which is an important protector of source water in Peru. SERNANP is responsible for the management and conservation of the National System of Protected Natural Areas and its administrative units (*Áreas Naturales Protegidas*, ANPs), which contain the headwaters and/or infiltration zones upon which many Peruvian cities depend for their water supply. Each ANP has a management plan, which includes activities that are beneficial to water sources and ultimately downstream users.

**MVCS** is responsible for water supply and sanitation, housing, construction, spatial development, and urban development in Peru. In practice, this means it develops policies, strategies, and legal regulations for the water sector.

**SUNASS** regulates and supervises urban and rural water and sanitation services. As per Legislative Decree No. 1280, SUNASS is also responsible for tariff setting for the country's 50 water utilities that operate in urban areas with more than 15,000 inhabitants. The tariff methodology takes various projections into account to produce a five-year tariff study that presents how the utility will ensure its economic and financial sustainability over the period. According to the MERESE legislation and guidance, water utilities must reserve a percentage of their income, collected from customers, in a non-fungible account to be used toward the conservation, recovery and sustainable use of sources of ecosystem services. These fees, along with those taken for a disaster risk management fund (*Gestión de Riesgo de Desastres*, GRD) and an adaptation to climate change fund (*Adaptación al Cambio Climático*, ACC) are included in the tariff study (OECD 2022). SUNASS provides technical assistance to water utilities on how to calculate and incorporate MERESE into their water tariffs. It also approves them. Finally, SUNASS works with water utilities to support the implementation of MERESE funds.

### Regional and Local Government

**GOREs** and **GOLOs** are responsible for comprehensive and sustainable development in their jurisdictions, including the water and soil resources that fall within them. In carrying out this task, they plan and manage an annual budget approved by Congress and financed through various sources, including contributions from local taxpayers and transfers from the central government. In fulfilling their mandate, GOREs and GOLOs also finance various activities for the conservation and sustainable use of ecosystem services, meaning many target lands important to source water protection. Their legal standing also makes it possible for them to receive donations to support the activities. These activities are identified, developed, prioritized, shared with the public, and finally approved in five-year Concerted Regional Development Plans (*Planes de Desarrollo Local Concertado*, PDLCs) and Concerted Local Development Plans (*Planes de Desarrollo Regional Concertado*, PDRCs).

With respect to MERESE regulations and guidance, it is the directive of the GOREs and GOLOs to work closely with the aforementioned national actors, as well as their regional and local counterparts, to promote the mechanism. In some cities, this results in their close coordination with water utilities on their respectively financed MERESE projects, and in others it results in GOREs or GOLOs carrying out their own MERESE projects, which they finance using public funds and signing a MERESE agreement to transfer those funds to the upstream community providing the ecosystem services.

### Water Utilities

Water utilities are mandated to actively promote and implement MERESE by integrating them into their master plans, in accordance with SUNASS regulations. They are granted the authority to formulate, evaluate, approve, and execute MERESE fund financed investments, specifically targeting the conservation, recovery, and sustainable use of ecosystem services sources, contingent upon SUNASS' approval in their respective tariff study. Since 2016, there have been subsequent updates to relevant decrees and new resolutions have been issued to establish more robust guidance on how water utilities are intended to implement MERESE. For example, Resolution No. 039-2019-SUNASS-CD included a regulatory framework for water utilities to follow when first establishing their MERESE programs, breaking down the process into three-steps: design, rate approval, and implementation.

### Others

NGOs play a large role in source water protection in Peru, mostly providing technical expertise during various stages of the implementation process, but some meet the legal requirements to receive transfers of MERESE funds to execute MERESE projects. For example, the private non-profit Fund for the Promotion of Protected Natural Areas of Peru (*Fondo de Promoción de las Áreas Naturales Protegidas del Perú*, **PROFONANPE**) is a public interest entity authorized by law to manage and administer public

funds. PROFONANPE plays a crucial role in managing funds for initiatives that contribute to the conservation of biodiversity and the mitigation and adaptation to climate change. Its responsibilities include administrative and financial management, as well as providing multidisciplinary technical support, leveraging expertise in the thematic areas addressed by each initiative. While its primary focus has been on ANPs, its influence extends throughout the entire Peruvian territory. Its current portfolio includes biodiversity conservation, climate change adaptation, and MERESE projects.

**Water Funds** (*Fondos de Agua*) are a financial and governance model used globally by cities, development banks, and conservation practitioners to mobilize funding and coordinate watershed management (Brauman et al. 2019). In Peru, they are registered as NGOs and act as watershed/basin coordinators/conveners and provide technical assistance and implement source water protection interventions. There are three active water funds in Peru (AquaFondo [*Fondo de Agua para Lima y Callao*], FORASAN Piura [*Fondo Regional de Agua*], and the Quiroz Chira Water Fund [*Fondo del Agua Quiroz Chira*]) and one in development for the city of Cusco (*Alianza Latinoamericana de Fondos de Agua*, n.d.; Cerdán Estrada et al. 2023). For these to be able to receive MERESE funds and carry out MERESE-funded projects, they must be recognized entities (Supreme Decree No. 019-2017-VIVIENDA).

The USAID-Canada-funded \$27 million **Natural Infrastructure for Water Security (NIWS) activity** ran from December 2017 to June 2023 with the objective of increasing investments in natural infrastructure, a form of source water protection, to improve water security and resilience to climate change. In its campaign to scale up investments in source water protection, NIWS developed various tools and assisted six water utilities with the development of a combined portfolio of 37 natural infrastructure projects valued at more than \$25 million. In June, NIWS was extended for another four years to bring a large portion of its broader portfolio, which consists of 80 projects valued at \$440 million, through mobilization stages to full implementation while documenting the benefits these projects generate and improving practices around natural infrastructure investment design and management.

## 2.3 FINANCING AND IMPLEMENTATION OF SOURCE WATER PROTECTION IN PERU

The two main funding sources for source water protection implementation in Peru are 1) public funding and 2) water tariffs via MERESE mechanisms. The former is available to national ministries and agencies, GOREs, and GOLOs.

The public drinking water utilities in Peru are the leaders in MERESE adoption. As of November 2023, 45 of the country's 50 water utilities have approved tariffs that include the MERESE fee and are collecting MERESE funds (Rivas Gutiérrez 2023). However, completing the required steps to integrate MERESE into their operations and receiving approvals for their proposed MERESE fee have taken time. As a result, more than half of the 45 utilities did not start collecting MERESE fees until 2019. In addition, amounts collected vary widely from one water utility to another and fluctuate significantly year to year within utilities.

Most water utilities have made it to the milestone of collecting funds but are faltering when it comes to the subsequent steps, which involve the actual on-the-ground execution of the interventions. Of the 45 MERESE fee-collecting utilities, only 20 have started to carry out their plans of interventions (*planes de intervenciones, PIs*), of which five are still performing community awareness building (a precursor to negotiating and signing a MERESE agreement) or designing studies. Only 15 utilities have actually begun executing interventions in their targeted watersheds.

In terms of spending, figures from July 2023 show that water utilities have spent only PEN 25M (~\$6.6 million) on implementation of MERESE projects (Rivas Gutiérrez 2023). A 2022 SUNASS-led ecosystem degradation assessment of the watersheds—upon which the country's 50 water utilities rely for their

source water—found that Peru has a PEN 50 billion (\$13.15 billion) funding gap to address watershed degradation (Rivas Gutiérrez 2023).



## 3.0 KNOWLEDGE GAPS

There is a general consensus that source water protection helps build urban water supply resilience (UN WWAP/UN-Water 2018; Abell et al. 2017; Matthews et al. 2019); however, it is not a widespread practice in lower- and middle-income countries (LMICs). The USAID/Urban Resilience by Building and Applying New Evidence in Water, Sanitation, and Hygiene (URBAN WASH) Activity reviewed literature and conducted seven case studies in LMIC cities where source water protection projects have been implemented<sup>2</sup> and found that planning and implementing measures to protect source water are generally not prioritized by city water authorities (USAID URBAN WASH 2023). Source water protection in LMICs is mostly driven by external donors. Though these programs can be effective, they are perceived to lack longevity due to insufficient local investment. Moreover, due to donor funding cycles, interests, and indicators, many donor-driven source water protection efforts either focus entirely on planning (e.g., modeling watersheds, developing action plans, etc.) or implementation (e.g., reforestation degraded watersheds) and lack the integrated planning and implementation necessary for successful, long-term source water protection.

However, there are a growing number of self-driven and locally financed source water protection programs in Latin America. Many of these programs are financed by water users who pay for source water protection, such as through PES mechanisms (Salzman et al. 2018; Echavarría, Cassin, and Bento da Rocha 2021; Trémolet et al. 2021). Given this focus on upstream-downstream linkages, a growing body of research focuses on the motivations of upstream communities, who invest time, labor, and/or land in source water protection (Prado et al. 2021; Bremer et al. 2018; De Martino, Kondylis, and Zwager 2017; Jones et al. 2020). This body of research has clearly demonstrated the importance of non-financial motivations, like equity and justice, for upstream communities engaging in source water protection, and this in turn has begun to affect the types of incentives some programs offer (Bremer, Brauman, and Echavarría 2023; Nelson et al. 2020). Conversely, research in Peru has focused on estimating the economic value of hydrologic ecosystem services in watersheds and measuring downstream residents' willingness to pay for improved hydrologic ecosystem services and upstream community' willingness to accept source water protection activities (Casani Sierra et al. 2023; Rodríguez Mauricio and Castro Obeso 2022).

Far less attention has been given to the motivations of actors within financing and implementing institutions. In many cases, source water protection programs simply assume that building a sustainable funding source hinges on incentivizing potential investors by providing information about the cost effectiveness, often demonstrated in the form of a cost-benefit analysis or return-on-investment study (Shapiro-Garza et al. 2020; Mandle et al. 2019). Within the existing literature, what focus there is on “payers” and “implementors” tends to focus on corporate actors (Hemingway and Maclagan 2004; Babiak and Trendafilova 2011), though specific research on watershed investment programs is beginning to emerge (Bremer et al. 2020; Lima et al. 2019). This research has shown that stakeholders invest in source water protection for a wide and varied number of reasons (Shapiro-Garza et al. 2020). For example, a politically and economically powerful sugarcane cultivators' association formed the Water Fund for Life and Sustainability (*Fundación Fondo de Agua por la Vida y la Sostenibilidad*, FAVS) initiative in Colombia in 1989 by to secure water for irrigation (Nelson et al. 2020; Shapiro-Garza et al. 2020). Bremer et al. (2020) also found that different actors within and across organizations had differing motivations (from financial to hydrologic to ecological and social) and used hydrologic information in

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<sup>2</sup> Note that the term “source water protection” was rarely found in the context of LMICs. Most publications referred to such activities by the planning approach (e.g., watershed management, water safety), concept (e.g., nature-based solutions), funding mechanism (i.e., payment for ecosystem services, water funds, investments in watershed services, etc.), or intervention type (e.g., natural infrastructure, reforestation, etc.) used.

different ways in various decision contents, ranging from generalized and translocated findings to inspire action to engagement through community-based monitoring. Providing effective hydrologic and associated financial information requires knowledge of how this information is being used (Bremer et al. 2020; Hamel et al. 2020).

In Peru specifically, a study of 17 MERESE projects in 2015 found numerous legal and institutional limitations and shortfalls, citing regional actors' and water utilities' lack of clarity on and knowledge about MERESE, its regulations, technical conservation practices, and design guidelines (Quintero and Pareja 2015). However, with the MERESE Law being in effect for a decade and nearly all water utilities counting themselves as adopters, there is a consensus that Peru is entering a new MERESE era—one of learning and refinement. Water utilities are moving from establishing the MERESE fund to fulfill a legal obligation to harnessing it and using it as a tool to improve their utility's sustainability and resilience.

In a more recent study of the characteristics and implementation progress of 37 utility MERESE projects identified in 2020, only 12 had completed the negotiation step and were either starting to or actively executing the project in the target watershed (Tristán et al. 2022). Based on one key informant from SUNASS, this study identified three general bottlenecks to utility implementation of MERESE. Building on these studies, WWF and SUNASS published two reports in 2023 examining the specific bottlenecks water utilities in the Amazon experience implementing MERESE and outlining strategies to overcome them (Torres Medina et al. 2023a; 2023b). However, of the 20 identified bottlenecks, most were specific to the difficult operating context of the region. Our study will build on this past research to focus on the range of regional and city actors responsible for implementing these interventions and by focusing on the key decisions across the full implementation process—from planning to execution.

Since MERESE was legally established in 2014, there has only been one study of the impacts (i.e., financial and land cover change) of a past watershed PES intervention in Moyobamba (Montoya-Zumaeta, Rojas, and Wunder 2019). Similarly, the only available research on the motivations of Peruvian actors to invest and implement in source water protection focuses on a unique case study of the formation of the FORASAN water fund in Piura in 2015 and its subsequent implementation of interventions and does not capture the current institutional environment (Ostovar 2019).

Understanding how and why actors within financing and implementing institutions decide to implement source water protection activities is critical to the design and support of these programs (Lima et al. 2019). This requires evaluation of actors across agencies and across national, regional, and local scales, as all are required for effective implementation, and previous research has shown variation in motivation across these axes (Bremer et al. 2020; Lima et al. 2019). It is critical to explore the motivations and information needs of actors in a context in which source water protection has ostensible legal and financial support, as these barriers must be overcome before implementation is possible (Salzman 2009; Romulo et al. 2018). Peru and the MERESE legislation provide a context to build more systematic and actionable insight into the drivers and associated information needs of financiers and implementors.

## 4.0 RESEARCH DESIGN

This research will follow a phased approach (see Figure 2). Phase 1 will investigate what motivates various actors to invest in source water protection interventions. It will examine how decision-makers, investors, and local communities consider different impacts, financial benefits, costs, and other factors when considering these interventions in five Peruvian cities.

Findings will be presented to local stakeholders in a dissemination event that will also serve as a co-design workshop for Phase 2, during which participants will prioritize the drivers and barriers and select one to two, which may be assessed in Phase 2 (see Section 5). If approved, Phase 2 will examine how a deep-dive assessment on selected drivers or barriers (identified in Phase 1 results and prioritized by stakeholders and URBAN WASH in the co-design workshop) can be performed in low-resource settings and effectively communicated to stakeholders. Phase 2 of the research will be co-designed based on the results of Phase 1, so that in-depth assessments are tailored to the motivators that stakeholders deemed most important (details will be presented in a dedicated Phase 2 inception report).

This first phase of implementation research will be a qualitative study to understand what drives the investments (funds, labor, land, etc.) of national, regional, and local decision-makers in source water protection in Peru.

This section details the research plan for Phase 1.

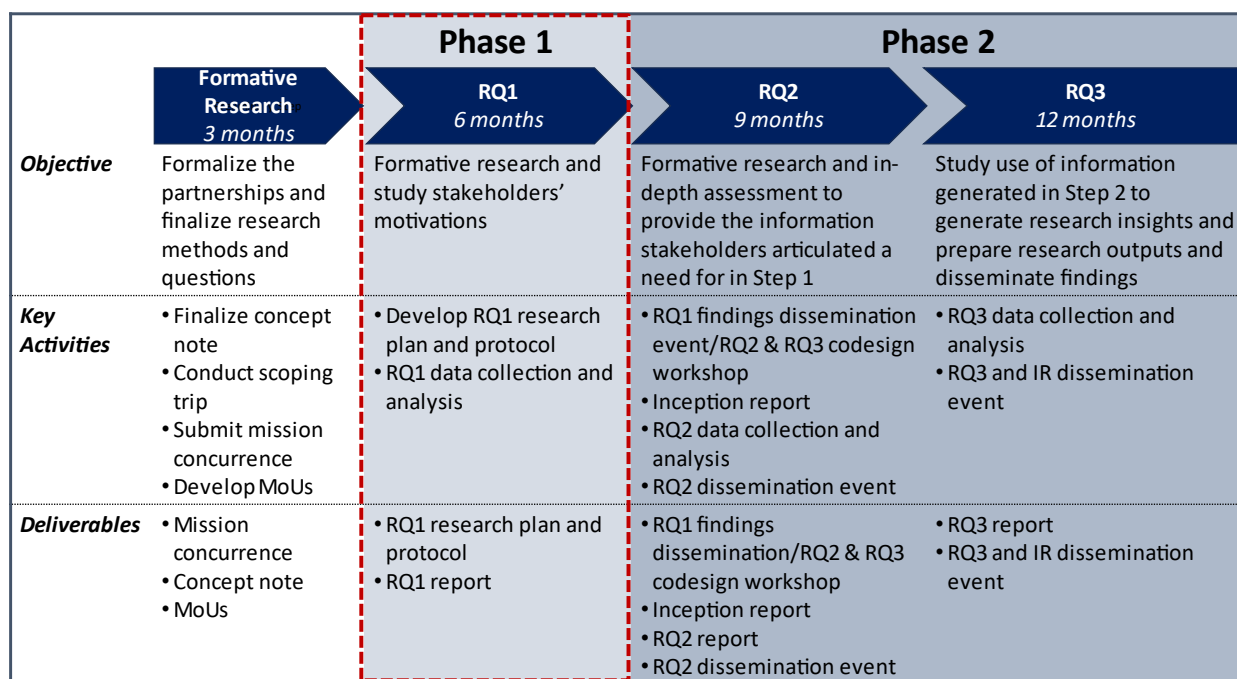


Figure 2: Peru Phased Implementation Research Approach

### 4.1 STUDY AREA

This study will take place in five cities located in central and southern Peru: Arequipa, Ayacucho, Cusco, Huancayo, and Ica. Details about the selected cities are included in Table I. To be as comparable as possible, cities were selected based on geographic proximity, population size, approval of the city's

water utility’s MERESE fund, and reliance on similar water source types (high Andean hydrologic regimes). The selection process also considered variables that would make for interesting comparison between cities, including differences in the duration of the MERESE program, the presence of other actors investing in source water protection interventions in the city, various water security challenges, and engagement with NIWS.

**Table 1: Phase I Cities**

#	City	Department	City Population (2022) <sup>3</sup>	Name of Water Utility Serving City	Watershed(s)
1	Arequipa	Arequipa	1,101,200	<i>Servicio de Agua Potable y Alcantarillado de Arequipa Sociedad Anónima (SEDAPAR)</i>	Cuenca Quilca-Chili
2	Ayacucho	Ayacucho	216,900	<i>Servicio de Agua Potable y Alcantarillado de Ayacucho Sociedad Anónima (SEDA Ayacucho)</i>	Qichcahuasi-Chanquil
3	Cusco	Cusco	490,400	<i>Empresa Prestadora de Servicios de Saneamiento Publica de Accionariado Municipal Sedacusco Sociedad Anónima (EPS SEDACUSCO)</i>	Piuray Ccorimarca and Vilcanota
4	Huancayo	Junin	422,600	<i>Empresa Prestadora de Servicios de Saneamiento Sedam Huancayo Sociedad Anónima (EPS SEDAM Huancayo)</i>	Shullcas, Chuspicocha, Lazuntay, Yaguarpuquio, Huatupalla, Achapa, Ronda, and Tablapampa
5	Ica	Ica	348,400	<i>Empresa Municipal de Agua Potable y Alcantarillado de Ica Sociedad Anónima (EPS EMAPICA)</i>	Palpa and Llauta

## 4.2 DATA COLLECTION AND ANALYSIS

Data collection and analysis will take place in stages. First, secondary data will be collected and used to refine and customize the semi-structured interview guides to the specific participants and finalize the list of key informants in the five selected cities. Simultaneously, URBAN WASH will conduct several key informant interviews (KIIs) to fill any gaps in the secondary data and better understand the historical contexts of study cities. In the second stage, URBAN WASH will conduct in-person semi-structured interviews with various national, regional, and local actors (i.e., investors and decision-makers) involved with past and/or future financing and implementation of source water protection interventions and analyze the data.

### 4.2.1 SECONDARY DATA

URBAN WASH will first develop a detailed understanding of the source water protection landscape for each city by identifying all actors that have invested (e.g., time, funds, or resources) or plan to invest in source water protection interventions and if there has been any coordination between them. This will extend to the history of investments, including planning involved and selection of type to address specific water security challenges. URBAN WASH will request annual reports, agreements between stakeholders, documented intervention processes and outcomes, and plans (see Table 2 for comprehensive list of document requests) from our partners and other relevant stakeholders. Some of

<sup>3</sup> CPI Research 2022.

these requests have already been submitted and stakeholders have confirmed that the information is available and can be shared.

**Table 2: Summary of Secondary Data Requests**

Stakeholder	Documents to be requested	Data to be extracted
<b>National level</b>		
MINAM	<ul style="list-style-type: none"> <li>Annual Report (Resumen Anual)</li> </ul>	<ul style="list-style-type: none"> <li>Investments (to date and planned)</li> <li>Types of interventions</li> </ul>
SUNASS	<ul style="list-style-type: none"> <li>Annual Report (Resumen Anual)</li> </ul>	<ul style="list-style-type: none"> <li>Investments (to date and planned)</li> <li>Types of interventions</li> </ul>
MIDAGRI	<ul style="list-style-type: none"> <li>Annual Report (Resumen Anual)</li> </ul>	<ul style="list-style-type: none"> <li>Investments (to date and planned)</li> <li>Types of interventions</li> </ul>
<b>City/regional level</b>		
Water Utilities	<ul style="list-style-type: none"> <li>Tariff Studies</li> <li>Rapid Hydrologic Diagnostic (Diagnóstico Hídrico Rápido, DHR)</li> <li>Contribution Characteristics (Caracterización de los Contribuyentes, CC)</li> <li>PI</li> <li>PMO</li> <li>Optimized Institutional Plan (Plan Operativo Institucional, PIO)</li> <li>MERESE Agreements (Acuerdos de MERESE)</li> <li>Annual Report (Resumen Anual)</li> </ul>	<ul style="list-style-type: none"> <li>Investments (to date and planned)</li> <li>Types of interventions</li> <li>Procurement mechanism for interventions</li> <li>Support received</li> <li>Community partners</li> </ul>
GOREs	<ul style="list-style-type: none"> <li>PDLIC</li> <li>PDRC</li> <li>POI</li> <li>Investment portfolio for the annual investment program (Cartera de inversiones del Programa anual de inversiones)</li> <li>Any additional documents that contain needed data</li> </ul>	<ul style="list-style-type: none"> <li>Investments (to date and planned)</li> <li>Types of interventions</li> <li>Procurement mechanism for interventions</li> <li>Support received</li> <li>Community partners</li> </ul>
Regional Water Administrations (AAA/ALA)	<ul style="list-style-type: none"> <li>PGRHC</li> <li>Any additional documents that contain needed data</li> </ul>	<ul style="list-style-type: none"> <li>Actors and their roles</li> <li>Investments (to date and planned)</li> <li>Technical support provided</li> </ul>

Toward the end of secondary data collection, URBAN WASH will conduct several remote KIs to fill any gaps in the secondary data and better understand those cities with historically more complex contexts. Informants will include:

- I. Regional Water Administrations (AAAs/ALAs): The research team will hold KIs with representatives from all five ALAs (AAAs if ALAs are not available) to clarify any ambiguous findings from the document review and confirm that all relevant actors have been identified for the next stage of research. MINAM has expressed interest in better understanding what motivates private sector actors to invest in source water protection, which aligns with its mandate to promote MERESE to a wider audience. The KIs will be important for identifying any private sector actors having invested, actively investing, or planning to invest in source water protection interventions in the study area.

2. NIWS Staff: URBAN WASH will conduct KIs with two to three NIWS staff to learn more about the local contexts and better understand what support NIWS has provided to key actors (i.e., water utilities and GOREs) on planning and mobilizing financing for source water protection interventions for the cities where NIWS has worked.
3. Moyobamba Water Utility (*Empresa Prestadora de Servicios de Saneamiento de Moyobamba Sociedad Anónima*, EPS Moyobamba) staff: Since EPS Moyobamba was the pilot for the MERESE law, putting in place a PES mechanism in 2007, and has the longest running MERESE program, there is much to be learned about their experiences and motivations. The team will interview two EPS Moyobamba staff, preferably individuals that have worked on planning and budgeting MERESE projects and have been employed by the utility the longest.

## Analysis

URBAN WASH will develop a summary profile for each of the five cities. Each of these summaries will be populated with secondary data extracted from documents and information from the preliminary KIs described above. They will synthesize the available information on:

- The city's water sources:
  - Identify critical watersheds and projections.
  - Identify present and emerging water security challenges.
- The actors that have been investing in source water protection:
  - Their specific role and if it has changed at any point.
  - What interventions they have planned (including mode of implementation).
  - What interventions they have implemented (including mode of implementation).
  - How much money they planned on investing, have invested, and plan to invest.
  - Location in the watershed where interventions have been funded.

The profiles will then be used to customize the actor-specific interview guides, adding prompts and open-ended questions specific to each city's and actor's context and refine the analysis plan. They will also be useful for enumerators to prepare for interviews.

URBAN WASH will also develop two materials that interviewers will use with informants during the semi-structured interview in combination with structural questions:

1. A timeline of source water protection planning and intervention for each actor in each city.
2. A framework showing the flow of decision-making and legal and financial authority for actors in each city.

Interviewers will use these documents during the semi-structured interview in combination with structured questions. The timeline will provide an aid to respondents in remembering previous decisions or stimulating conversation, if needed. Key informants will validate the decision-making framework and will be able to reorganize the framework to show the flow of money and decisions within the actor.

### 4.2.2 SEMI-STRUCTURED INTERVIEWS

URBAN WASH will capture data on the decisions made by national, regional, and local actors on source water protection interventions and their motivations for making these decisions using semi-structured KIs. The selection of key informants is based on their work or engagement on source water protection

interventions (including planning) on the following scales: national,<sup>4</sup> regional, city/municipal, and community levels. Based on formative research and feedback received during the scoping trip, URBAN WASH has identified key national actors and regional/city institutions for semi-structured interviews and employee profiles to target. URBAN WASH will refine the selection of specific community respondents following development of the city summaries.

There will be a minimum of two interviews per institution (except for communities, where there will be one interview per community and two communities per city) investing in source water protection to obtain multiple perspectives and obtain a broader organizational perspective. The preliminary list of KIIIs includes:

- Twelve in-depth interviews with representatives from the following national ministries/agencies: MINAM, SUNASS, ANA, SERFOR, SERNANP, and MVCS.
- Forty to fifty in-depth interviews with representatives from the regional water utility, GORE, regional branches of national ministries (e.g., SERNANP and SERFOR), community leadership from intervention watershed(s), and the private sector (if any are identified during secondary data collection and analysis).

See Table 3 for a preliminary list of the key informants to be interviewed.

**Table 3: Preliminary List of KIIIs**

<b>Name of Institution</b>	<b>Specific Office</b>
<b>National</b>	
SUNASS	<i>Dirección del Ámbito de la Prestación</i>
MINAM	<i>Dirección General de Economía y Financiamiento Ambiental</i>
ANA	<i>Oficina de Planeamiento y Presupuesto</i>
MVCS	<i>General de Políticas y Regulación en Construcción y Saneamiento</i>
SERFOR	<i>Oficina General de Planeamiento y Presupuesto</i>
SERNANP	<i>Oficina de Planeamiento y Presupuesto</i>
<b>City</b>	
<b>Arequipa</b>	
SEDAPAR	MERESE Office
	Planning and Budgeting Office
GORE	Environmental Regional Management Office
	Planning and Budgeting Office
Municipalities of San Juan de Tarucani and Huayllacucho	Mayor's Office
Regional Office of SERNANP	Technical Programming Office
	Planning and Budgeting Office
<i>Centro de Estudios y Promoción del Desarrollo del Sur (DESCOSUR)</i>	Technical Programming Office
<b>Ayacucho</b>	
SEDA Ayacucho	MERESE Office
	Planning and Budgeting Office
GORE	Environmental Regional Management Office
	Planning and Budgeting Office
Municipalities of Cuchoquesera, Pampamarca, Chanquil, Chalana, Paras	Mayor's Office

<sup>4</sup> Consultations with regional and national actors during the scoping trip confirmed unanimous interest in having the research question answered by national actors, not just regional and local actors.



Name of Institution	Specific Office
Centro de Desarrollo Agropecuario (CEDAP)	Technical Programming Office
<b>Cusco</b>	
EPS SEDACUSCO	MERERE Office
	Planning and Budgeting Office
GORE	Environmental Regional Management Office
	Planning and Budgeting Office
Chinchero District	Planning and Budgeting Office
Centro Bartolomé de las Casas	Technical Programming Office
<b>Huancayo</b>	
EPS SEDAM Huancayo	MERERE Office
	Planning and Budgeting Office
GORE	Environmental Regional Management Office
	Planning and Budgeting Office
Municipality of Acopalca	Mayor's Office
Regional Office of SERFOR	Technical Programming Office
	Planning and Budgeting Office
<b>Ica</b>	
EPS EMAPICA	MERERE Office
	Planning and Budgeting Office
GORE	Environmental Regional Management Office
	Planning and Budgeting Office
Municipality of Palpa and Llipata	Mayor's Office
Regional Office of SUNASS	Technical Programming Office
	Planning and Budgeting Office
<i>Centro de Estudios para el Desarrollo y la Participación (CEDEP)</i>	Technical Programming Office

Given the emergent nature of the research, finalization of the key informant selection will be confirmed during secondary data analysis. Similarly, depending on the diversity in responses from interviewees, URBAN WASH may conduct one or more additional semi-structured interview per water utility or GORE (a question will be included in the interview guides to prompt informants to suggest further participants who satisfy the inclusion criteria).

URBAN WASH will conduct semi-structured interviews, which will be based on guides providing a list of open-ended questions and a general framework for the discussion. The broad areas of inquiry are provided below:

- Background of the participant, including role(s)<sup>5</sup> and experience within the organization.
- Structured questions asking participant to validate the understanding of decision-making authorities and their position within the framework.
- Mini tour questions to encourage the informant to speak about the organization's investments in source water protection, targeting past planning, financing, and executing source water protection interventions (will use timeline).
- Reflection on past decisions (timeline can be an aid here) on investing in, planning, and implementing source water protection interventions and inquiry around motivations and contextual factors for

<sup>5</sup> Part of the selection criteria includes tenure within the organization, so it is possible that the participant will have had many roles within the organization during their employment.

significant decisions and barriers (if there was a barrier, will follow up with questions about what was needed to overcome it).

- Reflection on current drivers and barriers.
- Inquiry on whether they would suggest additional participants and where they are on the framework.

Local members of the research team will review all interview guides. They will conduct interviews in Spanish and audio-record and transcribe them verbatim. Interviewers will also take field notes to document observations.

## **Analysis**

Qualitative coding and analysis will be used to systematically sort and organize the data from transcripts and analyze it according to key concepts and themes. URBAN WASH will adopt a hybrid approach to the qualitative analysis, beginning with deductive analysis using a set of a priori codes derived from secondary data and document analysis and then adding emergent codes through inductive analysis. The substantive codes will define key themes and concepts to explore within and across the coded transcripts. Both deductive and inductive codes will be iteratively refined based on emergent information in the data.

By assigning descriptor attributes to the qualitative data files such as sex, education level, geographic location, actor type, informant type, and years of experience, URBAN WASH will be able to identify and analyze trends in codes based on metadata.

Initial framing of substantive codes is as follows:

- Drivers
  - Political
  - Financial/Economic
  - Social
  - Environmental/Hydrologic
  - Institutional
  - Personal
- Contextual conditions
  - Political
  - Financial/economic
  - Social
  - Environmental/hydrologic
  - Institutional
  - Personal
- Barriers
- Approaches to overcoming barriers
- Key quotes and examples

For example, political drivers may include responsibilities outlined in policy or political gain, whereas environmental/hydrologic drivers may include goals of improving water quality. If statements by informants align with multiple codes, the excerpt will be coded to each.

The team will use this coding framework to examine data from KIIs to identify patterns and highlight convergence or divergence of opinion across informant type, actor, actor type, and city. Where divergence in responses is present, the field team may follow up with interviewees to explore possible reasons for divergence in fact, perception, and opinion.

Each member of the team will review and code the first interview. A roundtable meeting will then be held to discuss how members coded the interview and areas where there was variance. This meeting will provide research team members the opportunity to discuss how different codes are being interpreted and applied and if there are any changes to the coding that are needed. To ensure reliability of the coding, at least 10 percent of interviews will be double-coded, and major discrepancies between codes will be highlighted and addressed. The field team will review and synthesize the coded data to develop key findings.

Once analysis is complete, URBAN WASH will hold a final KII with EPS Moyobamba staff to present them with the qualitative analysis findings from the five cities and see how they compare it to their own experience, providing an indication of whether EPS Moyobamba had different motivations as the first MERESE adopter. Results will be shared during the dissemination event and integrated into the Phase I research brief.

#### **4.3 PHASE I FIELDWORK MANAGEMENT, QUALITY ASSURANCE, AND ETHICAL CONSIDERATIONS**

The Focus Area 3 (FA3) Lead will travel to Peru to train enumerators (the field team) on the interview guides. Enumerators will work in teams of two, with one asking the questions and the other taking detailed notes. This training will include mock interviews to refine the instruments and ensure the enumerators understand the purpose of each question. After the one-week enumerator training, the FA3 Lead will attend the first few semi-structured interviews with the trained interviewers to test the interview guides. Notes and transcripts will be shared with the URBAN WASH Chief of Party (COP), Deputy Chief of Party (DCOP), and FA3 Research Advisor and virtual meetings will be held between the FA3 Lead, field team, COP, DCOP, and FA3 Research Advisor to discuss how the semi-structured interview guides and questions performed during field testing and suggest any ways to improve them or make them function better in local contexts. With respect to data quality assurance measures, the field team will be responsible for transcribing interview notes daily using the established template provided in the interview guide and reviewing collected data daily. The FA3 Lead and Peru Engagement Manager will review data weekly.

All data generated from this study will be stored in a unified, cloud-based, password-protected, digital repository. The field team will manage all data collected at the field level, and the FA3 Lead will oversee it. For all interviews, the enumerator will read an informed consent statement to each interviewee before the interview begins and record their consent, including their approval of usage of recording devices. Original audio recordings will be deleted upon completion of the study to maintain privacy of interviewees unless otherwise requested by USAID. Findings will not be attributed to any individual in the outputs of this study.

Following the selection of a sub-contractor for data collection and analysis, URBAN WASH will determine whether approval from their Research Ethics Committee (the local equivalent to an institutional review board) is necessary.

## 5.0 ENGAGEMENT

URBAN WASH will create a technical working group (TWG) to provide input into all phases of the implementation research. Membership of the TWG will consist of representatives from MINAM, SUNASS, USAID/Peru, NIWS, two water utilities, and two NGOs/research institutes. It will be refined during Phase I, with written invitations sent in April or May.

During Phase I, URBAN WASH will engage members of the TWG once, after the completion of Phase I data collection and analysis at the Phase I dissemination event/Phase 2 co-design workshop in September/October 2024. The purpose of the workshop will be to share findings from Phase I and co-design possible in-depth assessments based on those findings. The results of the workshop will determine the scope of activities to be tested under Phase 2 of the research.

Throughout the research process, URBAN WASH will coordinate closely with NIWS to ensure complementarity with their learning efforts. URBAN WASH findings may be used by NIWS in their efforts to scale up source water protection beyond the actors they work with most directly. The findings regarding the contextual conditions, drivers, and barriers to transition from collecting funds to executing interventions will support NIWS' efforts to mobilize more funds in their portfolio of planned natural infrastructure projects and could also inform NIWS' work in supporting monitoring systems by helping them to best select and report on indicators that resonate with decision makers.

The Engagement Manager will share the Phase I research brief and key findings with non-TWG members using local coordination platforms identified during secondary data collection and analysis. Depending on informants' levels of interest, the Engagement Manager may plan a virtual Phase I dissemination event for interested local stakeholders.

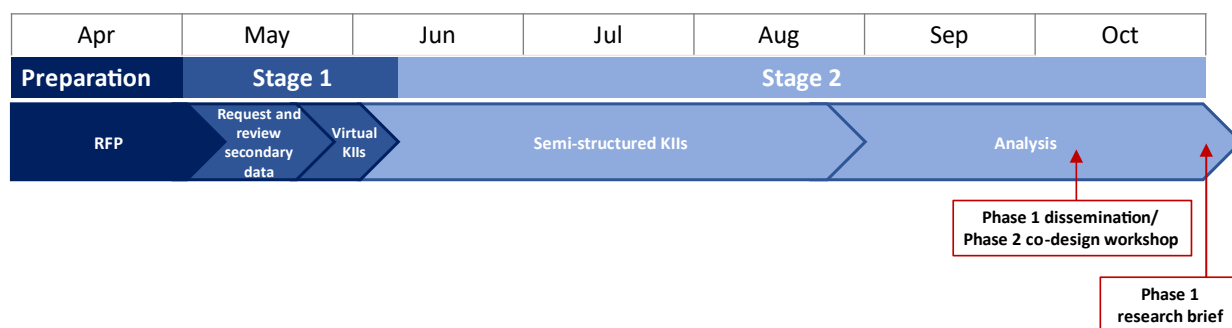
## 6.0 DELIVERABLES AND TIMELINE

Following completion of data collection and analysis, URBAN WASH will produce two key deliverables in order to disseminate findings both locally and globally. URBAN WASH will share findings at a workshop in Lima to inform the design of the second phase of the research activity.

**Table 4: Phase I Deliverables**

Deliverable	Due Date
Phase I dissemination/Phase 2 co-design workshop	September/October 2024
Phase I research brief	October/November 2024

This work will be conducted over an approximately six-month period, as shown in Figure 3.



**Figure 3: Phase I Timeline**

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