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EXECUTIVE SUMMARY

On the 200th anniversary of Peru's independence, the Natural Infrastructure for Water Security Project (NIWS) is revaluing ancestral practices and strengthening capacities to address the problems that Peru faces today. This quarter, NIWS launched a new publication that synthesizes findings in the literature about the effectiveness of ancestral practices and natural infrastructure to address disaster risks, launching the publication in concert with the country's leading authorities on disaster risk management. We advanced new investments in natural infrastructure and ancestral practices to address these risks, mobilizing over \$2.2 million in public and private investments and securing the viability of \$64 million more in project profiles. We achieved significant milestones in strengthening the policy tools available to Peruvian institutions to meet today's challenges, with the approval of a new Supreme Decree to protect wetlands through decentralized, multilevel governance and the adoption of the first Gender Equality Policy in Peru's water sector, approved by SUNASS. And we also made remarkable strides in accelerating individual capacity development, having strengthened the capacities of over 1800 people in natural infrastructure and sustainable water management this quarter alone.

Objective 1: Enabling Environment for Improved Natural Infrastructure

In May, the Ministry of Environment approved a new Supreme Decree for the protection of wetlands in Peru through their multisectoral and decentralized management. The regulation was developed, from its inception, with the technical and legal assistance of NIWS and in close coordination with the multisectoral National Wetlands Committee. The new regulation introduces specific prohibitions and sanctions for the most critical threats affecting wetlands, including peat extraction for commercial purposes that NIWS previously documented. It also clarifies the roles and responsibilities of various sectors and agencies (including MINAM, PRODUCE, SERFOR, INAIGEM, SERNANP, ANA, OEFA, OSINFOR, regional and local governments) in wetland management and conservation. NIWS is now working closely with MINAM to disseminate the regulation and support next steps for its implementation.

The new wetlands regulation is an example of the multisectoral, decentralized water governance that addresses threats to, and promotes investment in, natural infrastructure that follows a number of recommendations made in the OECD's Water Governance in Peru report, launched last quarter. This quarter, NIWS continued to support MINAM to prepare a report that could be issued by Peru's Multisectoral Committee, thereby prioritizing and internalizing OECD recommendations as Peru's own roadmap for improving its water governance, which should be finalized next quarter. NIWS also supported MINAM to build a common, multisectoral vision and strategy for nature-based solutions for water through a workshop we co-organized in June as part of MINAM's Implementers Dialogues series contributing to the update of the National Climate Change Strategy through 2050. The event was attended by 44 participants from institutions such as ANA, MINAM, MIDAGRI and SERFOR, began to find common needs and priorities for addressing enabling conditions across the 13 water resource

adaptation measures prioritized in the National Adaptation Plan that are considered nature-based solutions.

This quarter, NIWS also continued to focus on communication and the need to work in a continued to support and grow a network of communicators working to transmit the urgency of investing in nature-based solutions to address water risks across Peru. NIWS convened the first national meeting of Communicators for Water Management, *Voices for Water*, which brought together 146 communicators from across Peru (among more than 592 applicants). More broadly, our communications strategy reached over 11 million people through webinars, social media, and the press.

Objective 2: Information Management Improved for Decision-Making on Natural Infrastructure

This quarter, we launched a new publication that quantifies the important contributions of natural infrastructure and ancestral practices for disaster risk management entitled, *Natural Infrastructure for Erosion and Flood Risk Management in the Andes: What do we know?* The main findings were presented in a webinar on June 1st for National Disaster Prevention Day, in collaboration with Reconstrucción Con Cambios Authority and the National Center for Disaster Risk Estimation, Prevention, and Reduction (CENEPRED).

Building on the regional research agenda developed and validated with the ChiRiLuMa watershed council last quarter, this quarter NIWS expanded our efforts and worked with watershed councils also in the Quilca-Chili and Chira-Piura watersheds, such that each will be able to include regional research agendas on natural infrastructure as part of their new or updated watershed management plans. The regional agendas will feed into a national research agenda to be published next year and will begin a cycle of research to address critical knowledge gaps that NIWS will kick-start with our scholarship program, set to launch in partnership with ANA's academic roundtable next quarter.

NIWS also advanced eco-hydrological monitoring in the Tupicocha community of the Lurin watershed, Lima, formalizing an MOU and validating the specific monitoring plan with the community's leaders through this quarter. The integrated monitoring plan in Tupicocha will evaluate the ecological impacts of grazing practices, as well as the hydrological impacts of natural infrastructure management and ancestral practices including amunas. NIWS will begin to implement the monitoring equipment next quarter.

Objective 3: Portfolios of NI Projects Designed, Financed, and Implemented

This quarter, NIWS mobilized over \$2.2 million (M) in public and private investment for natural infrastructure. The \$2.1M investment in reforestation in Puzmalca by the Regional Government of Piura was brought to the final technical stages last quarter with the approval of its expediente técnico; this quarter NIWS followed through to secure final budget assignment and the scheduling of implementation start for this project. The investment will restore over 700 hectares of cloud forests, protect a series of headwater springs, implement an early-alert system for landslides and forest fires as well as a system of

surveillance and control to protect the critical area for Piura's water security. Over 5,000 day labor jobs for rural communities are expected to be created through the implementation of the project.

This quarter, NIWS also mobilized the first natural infrastructure investment in our portfolio by a private sector company. The Tumilaca pilot project in Moquegua, valued at \$180,000 and led by Anglo American Quellaveco, will implement a nursery with the local community and restore 20 hectares of forest with native species. The pilot is being developed in concert with the larger portfolio of public investments in Moquegua and is expected to generate lessons and models that will inform them.

Additionally, this quarter over USD 64 M of NIWS-supported investments were declared "viable" (i.e., project designs approved), bringing them to the final stages of project development and approvals. The bulk of the value of these approvals took place in our portfolio for Reconstrucción Con Cambios, with the aim of reducing flood and landslide risks in the San Juan de Matagente watershed (Ica/Huancavelica regions), Casma watershed (Ancash region), and Lacramarca watershed (Ancash region). These projects join two others that have previously been declared viable for investment by RCC. NIWS is also working closely with RCC and the UK Delivery Team working through the Government-to-Government agreement to develop the definitive studies needed to bring these projects to implementation.

The Regional Government of Piura declared the Macara-Quiroz public investment project (\$3M) viable this quarter, marking a key milestone in a project that supports NIWS learning site Samanga in the Quiroz basin. NIWS is continuing to advance preparation of the expediente técnico of the project, which will implement reforestation with native species, a hydrological monitoring system, and training and technical assistance for sustainable ecosystem management.

NIWS also secured the viability of USD 1.6 M in public investment projects developed for SEDAPAL. As part of the water utility's efforts to restore ecosystem services in Lima's source watersheds, these projects will aim to restore the catchment's capacity to regulate water flows and recharge aquifers, in the Poccrococha and Aycagranga microwatersheds. Like the other viable projects described above, these projects now move on to develop detailed project implementation plans before they are contracted for implementation.

Cross-Cutting Themes and Gender

This quarter, NIWS celebrated SUNASS's approval of its Gender Equality Policy, which made it just the third Peruvian institution to reach this milestone to date. The Policy contains specific commitments from preventing labor and sexual harassment, to promoting training development, to promoting equal pay. It also emphasizes the inclusion of a gender perspective in the design and implementation of MERESE by water utilities. The Policy was developed from its inception with the support of NIWS and its implementation will continue to be supported by the Project.

Last quarter, the Massive Open Online Course (MOOC) on Sustainable Water Management designed by NIWS was launched with Peru's National Public Administration School (ENAP). This course aims to

create a broad base of authorities, public officials and representatives of civil society informed about natural infrastructure and its role in sustainable water management. The online MOOC format allows participation on a rolling basis from people across the country. So far, the course has far exceeded the projections made, with 1,843 already having successfully completed the program.

Context and Adaptive Management

These advances took place in the context of another politically and socially tumultuous quarter. In national elections held this quarter, Peruvians elected the leftist rural schoolteacher Pedro Castillo to assume the presidency in July. President Castillo will be faced with an opposition Congress and a highly polarized political climate. In preparation for the change of administration, NIWS has made all efforts to advance and close pending approvals, decisions, and publications with the current administration. Likewise, NIWS is preparing to present the project, our advances, and the opportunities in natural infrastructure and water governance more broadly, to the new administration.

Peru continued this quarter to struggle against the coronavirus. In May, official numbers on COVID-related deaths were corrected to reflect double the impact previously reported and bringing Peru – by many counts – to the top of the world in COVID-deaths per capita. NIWS continues to observe strict COVID protocols, which have allowed limited fieldwork and meetings to continue during this quarter. As in previous quarters, some of our team, consultants, and partners were impacted by the virus this quarter. On the other hand, and providing optimism looking forward, vaccinations have rapidly accelerated in this period, defying expectations and already administering over 11 million doses of COVID-19 vaccines - although as of the close of the quarter only 11% of the population has been fully vaccinated. Next quarter, Forest Trends will implement another update to the institutional COVID protocol that covers the full NIWS project, as we continue to adaptively manage our work in the context of the ongoing pandemic.

ACRONYMS

AGRORURAL	Agrarian Productive Development Program (“Programa de Desarrollo Productivo Agrario Rural”)
AGU	American Geophysical Union
ANA	National Water Authority
ARCC	Authority for Reconstruction with Changes (“Autoridad para la Reconstrucción con Cambios”)
BAU	Business As Usual
CCA	Water Competency Center (“Centro de Competencias del Agua”)
CEO	Chief Executive Officer
ChiRiLu(Ma)	Chillon, Rimac and Lurin (watershed)
CIFOR	Center for International Forestry Research
CRHC	Watershed Resource Councils (“Consejo de Recursos Hídricos de Cuenca”)
CUBHIC	Cuantificación de Beneficios Hidrológicos de Intervenciones en Cuencas
DIS	Development Information System
DRM	Disaster Risk Management
EGASE	Environmental Management and Ecosystem Services Management department of SEDAPAL
EMAPA	Water and Wastewater Utility (“Empresa Municipal de Servicios de Agua Potable y Alcantarillado”)
ENAP	National School of Public Administration
EPMAPS	Metropolitan Public Water and Sanitation Company of Quito
EPS	Water utilities
ET	Expediente técnico
FIDA	International Fund for Agricultural Development (“Fondo Internacional de Desarrollo Agrícola”)
FONAG	Water Protection Fund (“Fondo para la Protección del Agua - Quito”)
FT	Technical File (“Ficha Técnica”)

GIRH	Integrated water resources management
GIS	Geographic Information System
GOP	Government of Peru
GORE	Regional government
GOLO	Local government
GRD	Disaster Risk Management (“Gestión del Riesgo de Desastres”)
GRRNyGMA	Regional Natural Resource and Environmental Management (“Gerencia Regional de Recursos Naturales y Gestión del Medio Ambiente”)
GTIG	Gender Equality Working Group (“Grupo de Trabajo Igualdad de Género”)
HIRO	NIWS Rapid-Focus GIS Tool (“Herramienta para Identificación Rápida de Oportunidades”)
HIRO-GRD	Version of HIRO for disaster risk management
HIRO-SEH	Version of HIRO for hydrological ecosystem services
HIRO-SH	Platform that integrates geoespacial data linked to natural infrastructure
ICP	Identification, Categorization, and Prioritization of Natural Infrastructure Investments Tool
iMHEA	Regional Andean Ecosystem Hydrological Monitoring Initiative
INAIGEM	Glaciers and Mountain Ecosystems Research National Institute (“Instituto Nacional de Investigación en Glaciares y Ecosistemas de Montaña”)
IOARR	Investments in Optimization, Marginal Expansion, Rehabilitation and Repositioning
IRMA	Rapid Identification of Action Measures (“Identificación Rápida de Medidas para la Acción”)
KINEROS	Kinematic Runoff and Erosion Model
MEF	Ministry of Economy and Finance
MEL	Monitoring, Evaluation and Learning
MERESE	Payment for Ecosystem Services (“Mecanismos de Retribución por Servicios Ecosistémicos”)
MIDAGRI	Ministry of Agriculture and Irrigation
MIMP	Ministry of Women and Vulnerable Populations
MINAM	Ministry of Environment

MINCUL	Ministry of culture
MOOC	Massive Open Online Course
MVCS	Ministry of Housing Construction and Sanitation
NCI	Nature and Culture International
NGO	Non-governmental organization
NI	Natural infrastructure
NIWS	Natural infrastructure for Water Security Project
ODS	Decentralized Offices of SUNASS
OECD	Organization for Economic Cooperation and Development
PAGCC	Action Plan on Gender and Climate Change
PBG	Good Governance Platform
PGRHC	Watershed Resource Management Plan ("Plan de Gestión de Recursos Hídricas en Cuencas")
PIP	Public Investment Project
PISCO	Peruvian Interpolated data of the SENAMHI's Climatological and hydrological Observations
PMO	Optimized Master Plan (of water utilities)
PNSR	National Rural Sanitation Program
PPR	Budgets by results ("Presupuestos por Resultados")
PROFONANPE	Peruvian Fund for the Promotion of Natural Protected Areas ("Fondo de Promoción de las Áreas Naturales Protegidas del Perú")
PSI	Subsectorial Program on Irrigation
PUCP	Pontificia Universidad Católica del Perú
RCC	Reconstrucción con Cambios
SEDACUSCO	Water utility servicing Cusco ("Servicio de Agua Potable y Alcantarillado de Cusco")
SEDAPAL	Water utility servicing Lima ("Servicio de Agua Potable y Alcantarillado de Lima")
SEDAPAR	Water utility servicing Arequipa ("Servicio de Agua Potable y Alcantarillado de Arequipa")

SENAMHI	National Hydrology and Meteorology Service (“Servicio Nacional de Meteorología e Hidrología”)
SERFOR	National Forest and Wildlife Service
SERNANP	National Service of Protected Areas (“Servicio Nacional de Áreas Naturales Protegidas por el Estado”)
SERVIR	National Civil Service Authority (“Autoridad Nacional del Servicio Civil”)
SNIP	National System of Public Investment (“Sistema Nacional de Inversión Pública”)
SPDA	Peruvian Society of Environmental Law
SEE	Sustainability, Effectiveness and Equity Scale
SUNASS	National Superintendence of Water and Sanitation Services
SWAT	Soil and Water Assessment Tool
TOR	Terms of Reference
UF	Project Development Unit (“Unidad Formuladora”)
UNALM	Universidad Nacional Agraria La Molina
UNSAAC	Universidad Nacional de San Antonio Abad del Cusco
USAID	United States Agency for International Development
USD	United States Dollar
USG	United States Government

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MINAM approved Supreme Decree No. 006-2021-MINAM, which establishes provisions for the decentralized and multi-sectoral management of wetlands, like those beginning restoration with investment by SEDAPAL in Milloc basin, Carampoma, Lima, Perú, (Photography: Forest Trends)

Objective I: Enabling Environment for Natural Infrastructure Improved

IR 1.1: Political and public awareness increased on the effectiveness of NI to secure water supply and increase resilience and the need for NI investments.

1.1.1 Implement NIWS branding plan and project communications

This quarter, our communication strategy reached more than 7,000 views through webinars, more than 2 million views through social media, and more than 11 million Peruvians through the press (print, television, online and radio).

This was the result of the implementation of five communication strategies focused on the approval of the new Supreme Decree for wetlands protection, the *Voices for Water* National Water Communicators Conference, the launch of the *Nature Takes Care of Us* campaign that highlights the importance of the natural infrastructure for disaster risk management, and natural infrastructure investment mobilization in Piura as well as in San Martin.

Webinar series

NIWS organized five webinars, which in total reached 971 live viewers and 7,200 views of the recording. In this quarter the attendance to the webinars has decreased with respect to the previous quarter because two of the webinars in this quarter have been focused on specific audiences, not for the general public, and also because the political situation of the country aroused a lot of interest from a large part of the usual audience. (Figure 1):

- *Natural Infrastructure for integrated disaster risk management* (See Section 1.3.4)
- *Inauguration of the 2021 Journalist Training Program* (See Section 1.1.2), focused on specific audiences.
- *Dialogue for Implementation: Enabling conditions for Nature Based Solutions for Water* (Section 1.3.2)
- *Voices for Water: First National Conference for Water Communicators* (See Section 1.1.2), focused on specific audiences.
- *Wetlands: Source of Water and Life* (See Section 1.3.2)

Figure I. NIWS Webinars during Q3 FY2021



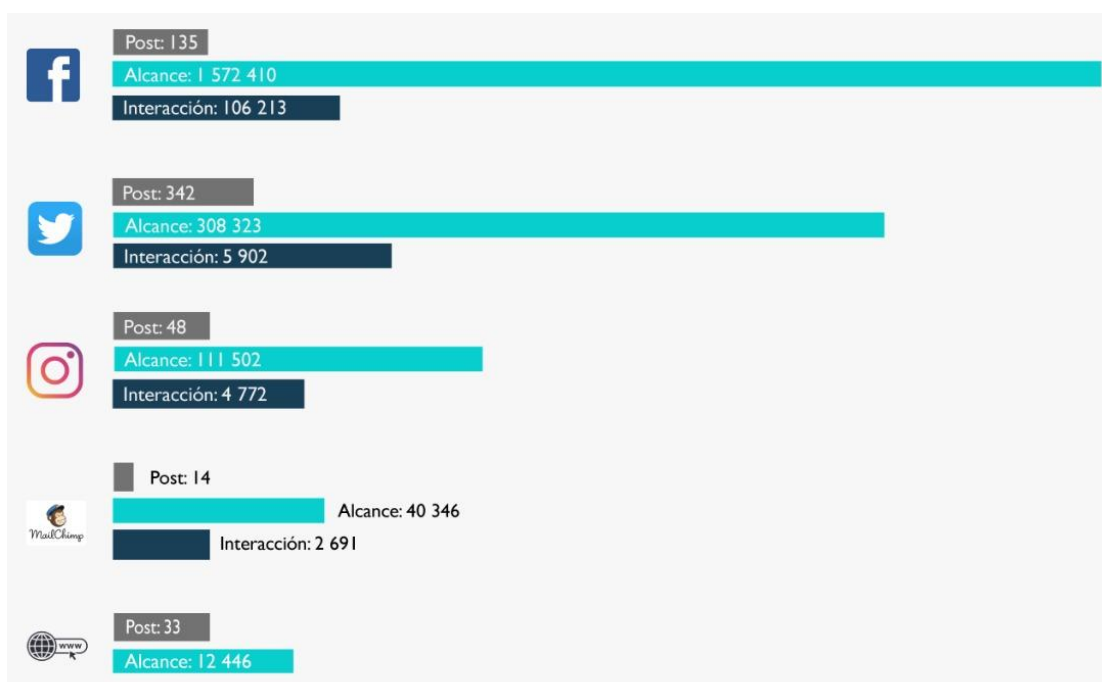
More details on the contents of each webinar are presented in subsequent sections corresponding to each activity.

Social media

This quarter, NIWS continued to expand its social media efforts through 572 posts that received more than 2 million views and more than 119,000 interactions across all consortium platforms (see Figure 2). The social media outreach focused primarily on NIWS' activities related to the legal protection of wetlands and the launch of the *Nature takes care of us* campaign.

On average, these posts received 209 engagements each across all social media platforms, which is an improvement over NIWS' previous performance and well above the industry average for NGOs (according to the article [Social Media Chart: Average interactions per post by industry](#)).

Figure 2. Social media and online engagement on NIWS partner platforms, Q3 FY2021



Media outreach

This quarter, the NIWS project prepared three press releases for national media and two press releases for regional media in Piura and Moyobamba, corresponding to the five communication strategies. These press releases resulted in 122 published articles reaching more than 11 million people (See Annex 6 for more details on the media coverage).

Quarterly newsletter and online content

The [13th NIWS newsletter](#) had an estimated reach of 63,065 people, 1,615 by direct mailing through mailchimp, 28,650 on Facebook and 32,800 through Redinfor. It has also reached 1,333 interactions in total, 972 on Facebook and 361 by direct mailing. The newsletter highlighted the wetlands regulation recently approved by MINAM with NIWS support and the importance of natural infrastructure for disaster risk management as part of *Reconstrucción con Cambios*.

The newsletter has been viewed a good number of times by managers, directors, coordinators of USAID, ANA, SUNASS, NGOs and the media. Of 2406 total views, 105 have been by this group.

The interaction (number of clicks) of the main notes has increased with respect to the previous quarter. In total there were 181 clicks to the notes: IN Publication for the GRD, BBC note on amunas (see I.1.5), approval of the D.S. on wetlands and Voices for Water.

Over 190 new images were added to the [NIWS Flickr](#) page, which now has a total of 3,315 photos and has received 318,523 visits since its inception.

I.1.2 Develop and implement communications strategies for raising public awareness, for national policymakers, and in new sectors.

Training program for journalists

NIWS launched a training program for journalists called *In search of sustainability for water security*. The virtual training program aims to strengthen the capacities of journalists to cover issues related to water resource management and natural infrastructure. The program includes 46 hours of content divided in two modules, one focused on technical aspects of water security and the other on journalism. The program is being run by SPDA, the Gustavo Mohme Llona Foundation and the Pontifical Catholic University of Peru (PUCP) and will last for a total of five weeks (June 28th - July 23rd). The opening remarks were made by renowned Nicaraguan writer and winner of the 2017 Cervantes Prize, Sergio Ramírez.

Throughout the course, participants will be provided with support to produce proposals for journalism related to ecosystems, ecosystem services, and investment in these issues. At the end, four journalists will be chosen to each receive \$1,000 to develop and publish their work. The pieces produced will help position natural infrastructure across the country. The program was announced on social media, online and the press, achieving a total reach of 828,758 views (48,634 views on NIWS channels and 780,124 on the La República newspaper's online platform). The course received 258 applicants, from which 57 participating journalists and journalism students (28 men and 29 women) were selected. The selected participants represent 14 of the 24 departments of Peru and various outlets of the written press, radio, television, and digital platforms.

Voices for Water: First National Water Communicators Conference

From June 14th to 16th, NIWS held the first National Water Communicators Conference, *Voices for Water*, which brought together 146 water communicators with the aim of generating a shared vision around natural infrastructure for water security in a space for knowledge exchange. The event was divided into two segments: i) nine presentations open to the public, which were broadcast live on SPDA's Facebook and covered by NIWS platforms and ii) three workshops held exclusively for selected participants. 584 applications to participate in the workshops were received, from which 99 communicators were selected to participate (69 women and 30 men). Of those selected, 80 replied to confirm their participation (56 women and 24 men), 40 actually participated (28 women and 12 men), and 23 completed the workshop and passed (17 women and 6 men).

Figura 3. Summary of Participants who completed the *Voices of Water* Conference



The conference reached 9,498 live participants and 189,627 total views. In addition, 3 million people were reached through the associated communication campaign which included 35 notes published in the press. One of the important results of the conference was the formation of working groups for the development of three media campaigns that will be developed with funding from NIWS:

- *Conservation of paramo ecosystems for water security*: a media campaign to raise awareness about the importance of conserving *paramos* for water security in the Quiroz watershed and its relationship to economic activities in the Piura region.
- *Music, a universal language*: a musical campaign to highlight the importance of wetlands through music. A *techno-huayno* (genre) song will be broadcast on radio and social media.
- *Voices from the wetlands*: a campaign that seeks to promote wetland conservation through short videos (<45 seconds) highlighting experiences in the Milloc wetlands and Santiago de Carampoma. These videos will feature men and women, both children and adults, from the high Andes who are involved with the conservation and restoration of these ecosystems. The aim is to reach viewers in the upper and middle watersheds with messages that value wetlands as essential for their water use.

Within the framework of "Voices for Water", a contest will be held to select 4 groups that present the best communication strategies that address the topic of sustainable water management and will award them a total of US\$4,000 for the implementation of these strategies.

1.1.3 Develop and deploy communications campaigns for upstream communities

Moyobamba Regional Communication Campaign

During Q3, NIWS began the implementation of a regional communication campaign in Moyobamba to highlight the approval of the *Expediente Técnico* of a natural infrastructure project in the region (Project name: *Recovery of water regulation ecosystem services in the Rumiycacu, Mishquiycacu and Almendra micro-watersheds*), in order to gain support from political decision-makers and the general public for its

execution. The campaign was coordinated with local partners, including EPS Moyobamba, the Municipality of Moyobamba, the MERESE Management Committee, and SUNASS' local office.

The campaign achieved 101,089 views on social media networks and 603,644 people through 19 articles on prevalent regional media channels that disseminated a pictoline (Figure 4) and two series of informative graphics. Javier Noriega, coordinator of the SUNASS San Martin office and spokesperson for this campaign, was interviewed by four local media outlets: *Radio Interactiva*, *Radio Atmósfera*, *Voz Tv* and *Auténticas TV*.

“Support from NIWS has helped advance Payment for Ecosystem Services (MERESE) with the drinking water companies in San Martin. The financial and technical assistance provided will contribute to improving sanitation services in the region’s main cities.”

Javier Noriega, Coordinator of SUNASS' San Martin Office

Figure 4. “More water for Moyobamba through forest conservation” Pictoline cartoon



Pusmalca (Piura) Regional Communication Campaign

NIWS led a similar communication campaign following the approval of the *Expediente Tecnico* for a natural infrastructure project in Piura (Project name: *Recovery of water regulation ecosystem services of the right bank of the Pusmalca micro-basin*). The campaign was carried out with local actors, including GORE Piura, the Watershed Resources Council, and the Municipal of Canchaque District. In Q3, the campaign achieved 85,006 views on social media and reached 2,243,274 people through 19 articles and interviews on the region's principal media outlets.

1.1.5 Strategically communicate benefits of natural infrastructure to priority audiences (briefs, web products).

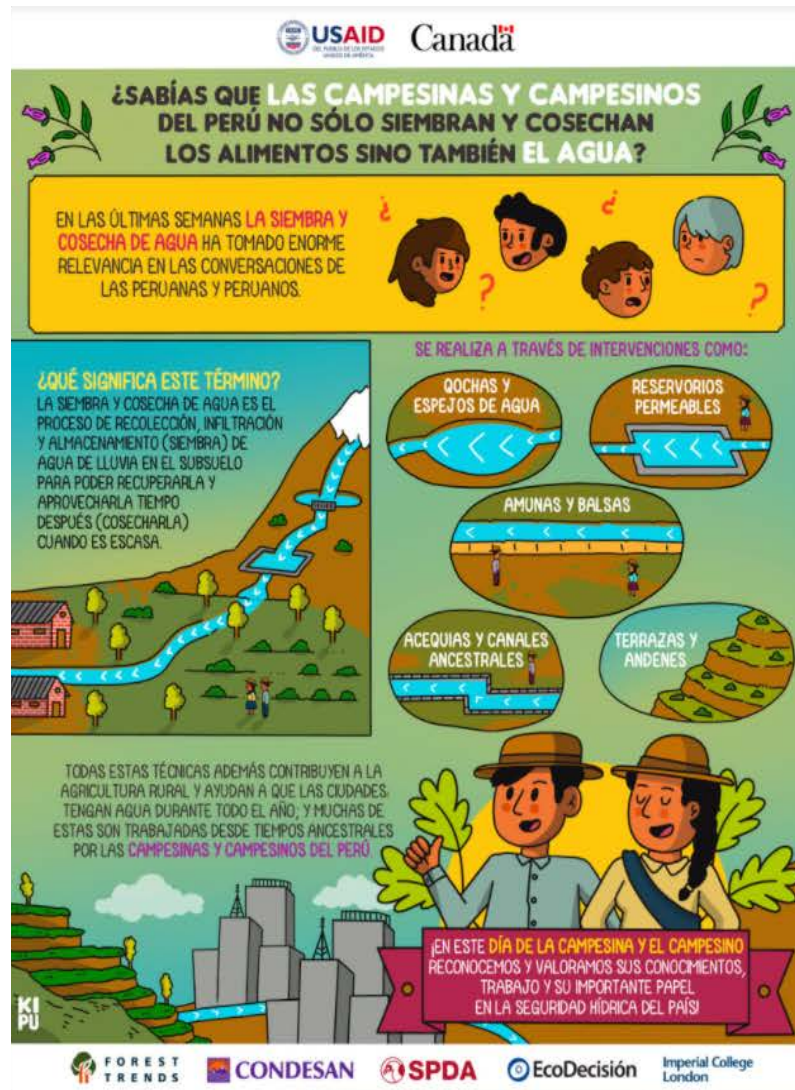
BBC Coverage of NIWS

On May 18th, BBC's Future Planet published a feature article on NIWS' work to revive ancestral practices and scaling nature-based solutions to the water crisis entitled, [Why Peru is reviving a pre-Incan technology for water](#). NIWS hosted the journalist behind the article, Erica Gies, on a series of field visits in 2019, including to Huamantanga, Carampoma, and Piuray. The article beautifully captured the landscapes and cultures NIWS works to support as well as the local leaders and experts from our team who are working together for a water-secure future. The article was widely shared on social media, including a Spanish version that was published by the BBC in June.

Dia del Campesino Comic Strip:

A pictoline [comic strip](#) was created and published in celebration of Rural People's Day (*Dia del Campesino*), which showcases the use of ancestral knowledge, like the storing and harvesting of water in the Andes, to manage water in rural communities. An [animated version](#) and an [Instagram version](#) were also created. The three versions were shared across NIWS social media platforms on June 24th and received 114,794 views.

Figure 5. *Día del Campesino* Pictoline Comic Strip



Milloc Video and TV Report

NIWS continued to execute the communication campaign started in Q2 surrounding SEDAPAL's first MERESE project, in the Milloc wetlands. This quarter, NIWS produced a [video](#) of the project's inauguration that compiles testimonies from authorities from the water sector and community members. The video was posted on NIWS social media platforms on April 28th and received more than 1,876 views.

NIWS also coordinated [a televised report](#) with *TV Peru*, which was broadcast on June 20th as part of their Green Alert (*Alerta Verde*) series. The report, which features NIWS' Director Fernando Momiy, highlights the importance of this SEDAPAL project that will provide the urgently needed recovery of the Carampoma wetlands, a fragile ecosystem endangered by illegal peat extraction and contamination. This report reached 957,000 people.

Figure 6. Screenshot of the televised *Alerta Verde* report on TV Peru



IR 1.2: High level roadmap to optimize use of natural infrastructure in Peru developed

1.2.1 Convene and charter Advisory Board

Technical Platform

During Q3, NIWS convened two technical platform meetings. In the April session, SEDAPAL presented initial lessons learned from the implementation of its first MERESE project, which covered political will and decision making, technical capacity building, community relationships, and next steps for implementing the rest of its MERESE portfolio. 21 women and 20 men from various government partner institutions participated in this meeting.

In the June session, the ARCC presented its progress executing natural infrastructure investments as part of its Integrated Plans; NIWS presented the findings from research on natural infrastructure for management of erosion and flooding in the Andes; and USAID presented an executive summary of the mid-term evaluation of NIWS. 15 women and 14 men from various partner institutions participated in this meeting.

1.2.2 Develop, publish and launch Common Vision on Natural infrastructure report

Forest Trends is currently updating the *State of Financing for Natural Infrastructure for Water Security in Peru* report based on comments from MINAM received last April. The analysis and narrative of the study are being adjusted based on the comments which were deemed appropriate. The investment database was updated to include all natural infrastructure investments made by the public and private sectors in 2020. The study is expected to be finalized next quarter.

1.2.3 Develop, publish and launch Common Vision on Natural infrastructure report

As reported last quarter, in March the OECD launched its report on Water Governance in Peru, which includes a number of recommendations on natural infrastructure and MERESE financing instruments informed significantly by NIWS' support and technical contributions. This quarter, NIWS supported MINAM to develop a draft report for Peru's Multisectoral Commission on Water Policy and Governance, which is now tasked with identifying priority recommendations in the OECD report and laying out a roadmap for their implementation. The report is currently in review by members of the Commission; here, the change of administration occurring so soon after the publication of the OECD report clearly presents a risk to the continuity of the recommendations. NIWS has worked and will continue to work closely with MINAM to follow-through on the publication of the priority recommendations and roadmap.

One of the ways NIWS plans to support the continuity and implementation of the OECD recommendations is through a communications campaign to disseminate the findings as well as original analysis on the recommendations focused on natural infrastructure. NIWS developed a series of products both independently and with MINAM this quarter, which will be finalized and coordinated for dissemination next quarter.

IR 1.3 GOP Planning Instruments Incorporate Natural Infrastructure

1.3.1. Build capacity of planners and national counterparts to incorporate Natural Infrastructure into formal planning instruments

Develop conceptual framework for NI investments for GRD with MINAM

NIWS continued the joint effort with MINAM to develop a technical datasheet (*ficha tecnica*) format for ecosystem services related to soil erosion control. NIWS is currently incorporating the latest comments from MINAM, the new version will be available next quarter. This tool will provide a framework for erosion control projects and accelerate their design and implementation.

MOOC: Sustainable Water Management

Last quarter, the MOOC Course designed by NIWS was launched on the ENAP platform. This course aims to create a critical mass of authorities, public officials and representatives of civil society informed about natural infrastructure and its role in sustainable water management. The online MOOC format allows participation on a rolling basis from people across the country.

“This training and online platform helps us to address any doubts we have, the guidance provided is accurate. I am new to the platform and I find it very easy to learn how to use and reinforce knowledge.”

**Clerin Quispe Matos, participant
in NIWS' MOOC course on
Sustainable Water Management**

So far, the course has far exceeded the projections made. 3,000 people were estimated to complete the course this year, however, 5,403 people have already started the course as of June 30th. 2,143 have completed the course, of which 86% (1,843 people) passed the final evaluation (Figure 7). Due to the high demand for the course, the original dates have been extended and the course will now run through until the end of November. Although the course does not have a live instructor, ENAP has provided the resources necessary to maintain an academic assistant. ENAP has also implemented a continuous evaluation system for the certification, which allows students who finish the course to receive the results of their final exam immediately. It appears that there is a lower dropout rate with the continuous evaluation system. Next quarter, Forest Trends and ENAP will continue to monitor the participation in the course.

Figure 7. Description of Participants in the Sustainable Water Management MOOC, Q3



1.3.2 Support incorporation of natural infrastructure into priority planning instruments at national level

Support incorporation of performance-based natural infrastructure into the National Adaptation Plan

As part of the process to update the National Climate Change Strategy through 2050, MINAM is promoting discussion of the challenges faced in implementing solutions to climate change. On June 15th, NIWS and MINAM organized a dialogue to identify enabling conditions that are necessary to create well-designed Nature Based Solutions (NBS)--13 of the 31 water resource adaptation measures prioritized in the National Adaptation Plan are considered NBS. A pre-event survey collected data on needs for institutional capacity building on these issues. The event was attended by 44 participants from institutions such as ANA, MINAM, MIDAGRI and SERFOR. Together, the survey and the event helped to identify priorities around enabling conditions for NBS, such as:

- Define a common vision that standardizes an approach across multiple sectors, local and regional governments and creates a coordinated plan of climate change adaptation measures including NBS.
- Generate evidence of the benefits of payment for ecosystem services for disaster risk management and ancestral practices, in collaboration with rural organizations and academia, in order to promote NBS interventions.
- Strengthen participatory surveillance by empowering communities and transcend from concept to action in terms of approaches and policies related to NBS climate change adaptation measures for water security.

NIWS will summarize the results of this dialogue so that they can be shared with the incoming administration after the change of government, in order to ensure continuity of this important process.

Support incorporating NI gap in National Sanitation Plan

Since FY2020, NIWS has been working with the Ministry of Housing, Sanitation and Construction (MVCS) to justify the inclusion of investments for the conservation of water resources in the National Sanitation Plan. This quarter, NIWS shared the results from applying HIRO to identify priority areas for water resource conservation with MVCS and ANA. The results were also submitted in a final report to MVCS for further comments.

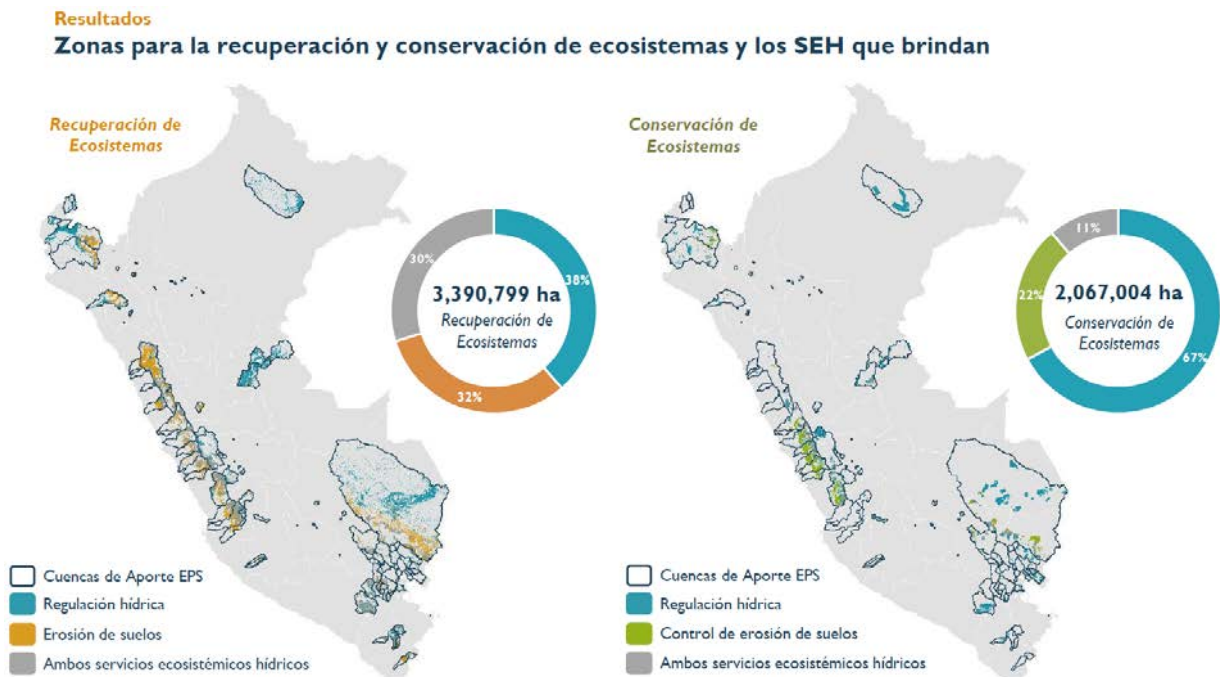
"The identification of areas for the conservation of water resources is the product of a great deal of work and will be very useful to support for including natural infrastructure in the sanitation sector, for the first time in such a clear and direct way."

Max Carbajal, Director of Drinking Water and Sanitation, MVCS

The report, which has been validated with EPS and CRHC of the six NIWS priority watersheds, identifies 5.5 million hectares of high and very high priority for the restoration and conservation of natural infrastructure in 133 watersheds that contribute to 47 EPS across the country (Figure I-8). In addition to providing input for the National Sanitation Plan, these results can also be used directly by EPS to develop new projects for the recovery and/or conservation of hydrologic ecosystem services.

In Q4, NIWS will host a webinar to present the methodology and results to decision makers and the general public. The MVCS is also expected to approve the National Sanitation Plan 2021-2025, which will include guidelines for the restoration and conservation of natural infrastructure in watersheds contributing to EPS across Peru.

Figure 8. Identified areas using HIRO for the recovery and conservation of hydrologic ecosystems and ecosystem services for the National Sanitation Plan



Support normative processes related to MERESE

This quarter, NIWS provided comments to MINAM regarding its proposed changes to the regulation of the MERESE Law. Comments were submitted through formal channels and presented in a meeting with the project's technical platform with MINAM; the comments reflect concerns of our team and MERESE implementers we partner with that the regulation could create more barriers and risks to MERESE implementers rather than clarifying and simplifying the pathways to MERESE implementation. As of this writing it does not appear that MINAM will substantially change their regulatory proposal based on these suggestions regarding MINAM's role in promoting and implementing MERESE, but it does appear that the changes could be interpreted to be limited only to voluntary use of a MERESE registry. NIWS will work with MINAM and MERESE implementers next quarter to clarify changes, identify and communicate concerns of others, as part of the public consultation process and help to find a path forward that can result in broader uptake and more efficient implementation of MERESE in the country.

Supreme Decree "General provisions for multisectoral and decentralized management of wetlands"

This quarter, MINAM approved Supreme Decree No. 006-2021-MINAM, which establishes provisions for the decentralized and multi-sectoral management of wetlands under the National Wetlands Committee. This achievement is a result of two years of legal, technical and communication assistance provided by NIWS, as part of a participatory process which included various state institutions and civil society organizations (ANA, MIDAGRI, PRODUCE, INAIGEM, IIAP, SERFOR). It represents a key development in Peru's legal framework for natural infrastructure because:

- It is the first detailed regulation on wetlands in the country; it is obligatory for all sectors, public and private, to follow.
- It addresses critical threats affecting wetlands, including peat extraction for commercial purposes, which NIWS has documented in Carampoma, and which is now expressly prohibited, with specific and enforceable sanctions, under this regulation.
- It clarifies the roles and responsibilities of various sectors and agencies (including MINAM, PRODUCE, SERFOR, INAIGEM, SERNANP, ANA, OEFA, OSINFOR, regional and local governments) in the management and conservation of wetlands.

During Q3, NIWS executed a communication campaign on the approval of the Wetlands regulation which highlighted its pioneering nature, importance, and benefits for fragile ecosystems. The campaign featured a multimedia page called [Our Wetlands](#), hosted on SPDA's *Actualidad Ambiental* website. The associated digital campaign achieved 521,824 views on social media, the press campaign included 41 articles published in mainstream media reaching 2,707,772 people, and the webinar reached 3,800 people.

Additionally, NIWS, in coordination with MINAM, organized an event to present the content of the Supreme Decree and its implications to the general public and key stakeholders across all levels of government. 125 people (70 women and 55 men) attended the virtual event, including several high level representatives from MINAM such as the Minister of the Environment, Minister Gabriel Quijandría, and the Vice Minister of Strategic Development of Natural Resources, Luisa Elena Guinand; the Minister of MIDAGRI; and the Vice Minister of Policies and Supervision of Agrarian Development, María Isabel Remy.

"Thank you Carol [Mora, from SPDA] for the enormous support of SPDA, Forest Trends and CONDESAN, under the Natural Infrastructure for Water Security Project, for preparing this technically sound proposal with ambitious objectives and goals!"

Gabriel Quijandría, Minister of the Environment, on Twitter, regarding the Supreme Decree for the protection of wetlands.

1.3.3. Support incorporation of Natural Infrastructure into public investment, focusing on Invierte.pe gaps and Presupuestos por Resultados.

Support GOREs to program investment and pre-investment for NI

NIWS continues to provide technical assistance for institutional development to the GOREs to design, mobilize and manage investments in natural infrastructure. As we are at an advanced stage of the institutional capacity building process, the work strategy for the next quarter will focus on the GOREs of Piura, Arequipa and Moquegua and will more actively include the strengthening of the CRHCs and their technical secretariat, in order to generate demand for natural infrastructure investments from the GOREs, beyond the NIWS. The strategy will also include additional advocacy work with the GOREs, in addition to the training, technical assistance and communication that is already being provided.

Support legal and regulatory reforms to promote and accelerate investment in NI

Agrorural is still reviewing the proposal for the “Productive *Andenes* Law” (Law 31077), which NIWS submitted last quarter. After Agrorural’s review, the proposal will be passed on to MIDAGRI for review.

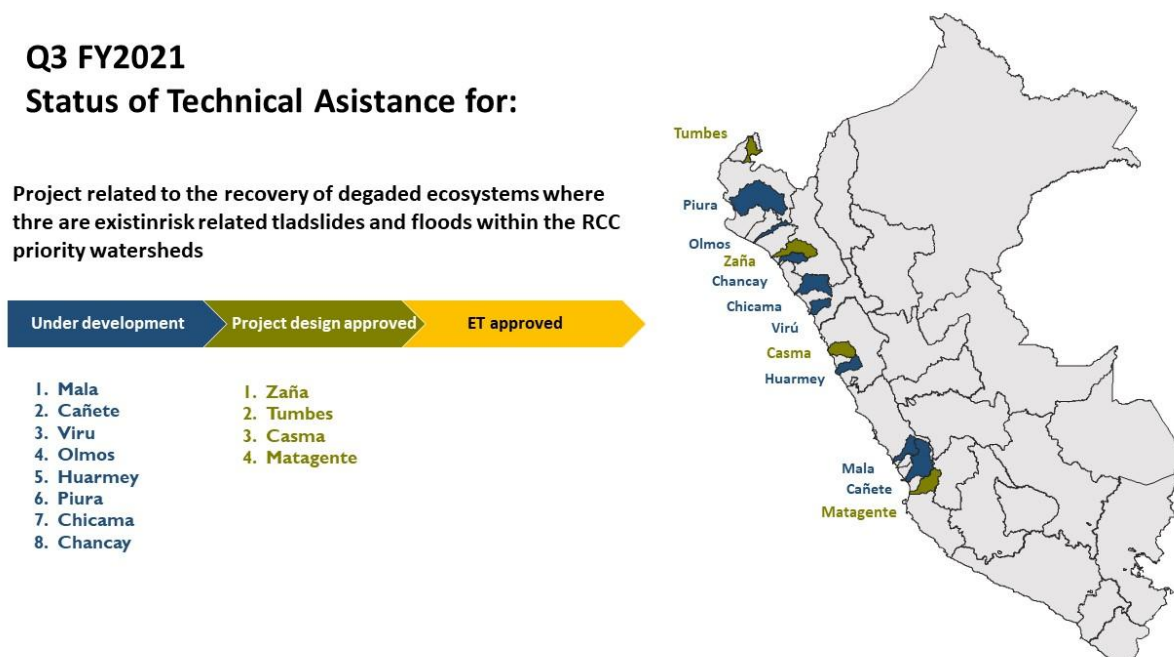
1.3.4. Facilitate coordinated natural infrastructure implementation for water security at the landscape level through approval of Natural Infrastructure in GIRH plans, EPS PMOs, and local/regional development plans

Support incorporation of NI into Reconstruccion Con Cambios Integrated Plans to Control Flood Risks

This quarter, three natural infrastructure projects under RCC have been declared “viable”: the Casma project (USD 26 M), the Matagente project (USD 17 M), and the Lacramarca project (USD 16 M). This is an important step towards the mobilization of these investments. The Casma and Matagente projects were developed with technical assistance provided by NIWS during 2020 and the first quarter of 2021, as well as additional support provided through the *Development of investments related to natural infrastructure and disaster risk management* course that occurred between November 2020 and January 2021. Lacramarca is part of the broader RCC portfolio that did not receive direct technical assistance but which is advancing in the overall process led by ARCC and MIDAGRI with NIWS support.

The Olmos, Huarmey, Virú, Cañete and Mala RCC natural infrastructure projects are expected to be declared viable next quarter. NIWS will continue to support the development of natural infrastructure projects in three additional watersheds (Piura, Chancay and Chicama).

Figure 9. Current state of natural infrastructure investments in the RCC watersheds receiving NIWS technical assistance (June 2021)



This quarter, in close coordination with ARCC, NIWS designed the *Nature takes care of us* communication campaign to disseminate the benefits of the RCC Integrated Plans and NI projects for livelihoods and to position NI as a strategy for DRM. This campaign has two phases: from May to August 2021 and October 2021 to March 2022. As part of the first phase, NIWS published the meta-analysis titled, "[Natural infrastructure for the management of flood and erosion risks in the Andes: What do we know?](#)" (see details in 2.1.4.) and prepared an associated [policy brief](#) and [infographic](#) on its results (see Figure 10). A webinar on “Natural Infrastructure in Integrated Disaster Risk Management” was organized on June 1st for National Disaster Prevention Day, which had 430 live participants and 1,700 total views on social media. The webinar was attended by senior officials from ARCC, Alberto Marquina, and Cenepred, Juvenal Medina. In total, the *Nature takes care of us* campaign achieved a total of 137,620 views on social networks and reached 4,079,114 people through seven articles in the mainstream press.

Figure 10. Infographic on Natural Infrastructure for Disaster Risk Management



1.3.5 Build institutional capacity, with a focus on local and watershed level institutions, to increase women’s participation in decision-making on natural infrastructure and water resources

Provide institutional strengthening support to watershed councils and ANA, including for mainstreaming gender

Institutional strengthening of watershed councils

Based on the analysis of opportunities to link Watershed Resource Management Plans (PGRHC) with formal planning instruments to strengthen their binding nature and thus their implementation carried out in Q2, this quarter SPDA led the preparation of draft guidelines to strengthen the PGRHC, which could be issued through an ANA Resolution. The proposed guidelines would fill a regulatory vacuum

that has prevented financing and implementation of the PGRHC and CRHC and establishing their roles for watershed management.

Specifically, the guidelines aim to support members of the CRHC to ensure the binding nature of the PGRHC as established in the legal framework of water resources; develop clear provisions to specify the binding nature of the PGRHC in the management instruments of regional and local governments, water user organizations, non-agricultural users, EPS, universities and communities; and define the work needed to monitor effective implementation. The guidelines will also contribute to capacity building for the CRHC for the implementation of their PGRHC, which contain important watershed conservation and recovery interventions for water security. The draft guidelines have been submitted to ANA's Water Resources Management Modernization Project for their revision. Next quarter, NIWS will promote the review and validation of the guidelines in collaboration with ANA.

Gender mainstreaming in ANA

ANA is still in the process of reviewing the Institutional Gender Diagnosis and Gender Mainstreaming Plan NIWS submitted last quarter. As soon as ANA is done reviewing these documents, Forest Trends will continue to provide technical assistance to support their implementation. More details on these efforts are described in Section 4.2.

Provide institutional strengthening support to EPS, with an emphasis on SEDAPAL, and SUNASS, including for mainstreaming gender

Institutional strengthening for MERESE implementation - SEDAPAL

In addition to supporting the mobilization of investments in various stages (see Section 3.2.1), Forest Trends has started to prepare a manual for the development and evaluation of natural infrastructure projects under SEDAPAL's MERESE program. The objective is to identify guidelines and procedures within SEDAPAL for the development of natural infrastructure projects to streamline the development of PIPs towards their viability. Once finalized, this manual will be incorporated into SEDAPAL's MERESE investment mobilization procedures. Forest Trends is about to start the process of hiring consultants to prepare this document in coordination with EGASE.

Additionally, NIWS has prepared a progress report on the initial stages of execution of the PIP Milloc. This report will help to identify potential bottlenecks earlier in the implementation of other MERESE projects. NIWS will continue to work on this process with EGASE next quarter.

Mainstreaming gender in SUNASS

With the support of NIWS and MIMP, SUNASS approved its gender equality policy through Board Resolution No. 011-2021-SUNASS-CD on May 3rd. These efforts, led in the Consortium by Forest

Trends, are described in more detail in Section 4.2. Next quarter, NIWS will continue to provide technical assistance for implementation of the activities outlined in the policy.



Project personnel are monitoring the operation of a weir in the upper Lurin river basin, Lima, Peru. This small construction for flow measurement is part of a network of rain gauges and various water level and temperature sensors to improve knowledge and decision making in the area. (Photography: CONDESAN).

Objective 2: Information Management Improved for Decision Making on Natural infrastructure

IR 2.1 Information generation for decision-making on natural infrastructure improved

2.1.1. Establish technical working group on Natural Infrastructure and shared research agenda

Convene a technical group of leading research and knowledge management institutions to prioritize green infrastructure research

The first regular meeting of the Mountain Technical Group (GTM) led by INAIGEM took place virtually on April 29th. CONDESAN, who represents NIWS in the GTM, attended. During the meeting, the GTM's internal regulations were approved and a proposal for its Glaciers and High Mountain Ecosystems Policy was presented for feedback from members of the group. This policy will be an important resource to strengthen support for projects and plans related to natural infrastructure and water security, especially for watersheds of glacial origin such as ChiRiLu, Quilca-Chili and Vilcanota-Urubamba. The draft policy includes strategic objectives, guidelines and activities, which will take place in pilot sites within watersheds of glacial origin and are related to NIWS' interests. Next quarter, CONDESAN will provide feedback on the policy, identify opportunities for collaboration, and identify key activities from the policy that could be included in the NIWS FY2022 work plan.

Develop and publish Natural Infrastructure Research Agenda

This quarter CONDESAN continued to develop three of the six research agendas for NIWS priority watersheds, which will provide the basis for a national Research Agenda for Natural Infrastructure and Water Security in the future. The three agendas currently in development (ChiRiLuma, Quilca-Chili, and Chira-Piura) are being coordinated with the technical secretaries of their respective watershed councils, so that they will be incorporated into each watershed resource plan (PGRHC). The other three agendas have not been started due to lack of response from the local counterparts (Vilcanota-Urubamba, Mayo) or the lack of a watershed council (Tambo-Moquegua).

The Quilca-Chili and Chira-Piura agendas are being developed by adapting existing research agendas for these regions created by the USAID PARA-AGUA project in 2017, which focus on water resources but not directly on natural infrastructure. To address the difference in scope, NIWS will make the appropriate connections to natural infrastructure explicit where necessary as well as develop additional research questions on the subject. To establish the research needs in the agendas, CONDESAN is reviewing existing information including biophysical characteristics of the watersheds, previous NIWS systematic reviews, and local student theses.

The publication for the ChiRiLuMa research agenda scheduled for this quarter was postponed in order to standardize its structure with the other two agendas. CONDESAN and Imperial are working together on this agenda, which focuses specifically on critical practices for water security in this region – sustainable livestock management for healthy Andean grasslands, and the restoration and replication of amunas. The ChiRiLuMa Research Agenda is also coordinated with key knowledge gaps identified in the development of Monitoring & Evaluation System for SEDAPAL (Activity 3.1.4.). Next quarter, NIWS will present the three agendas to their respective technical secretaries for validation.

2.1.2 Systematize relevant hydrometeorological datasets and socio-economic datasets and process for use in NIWS analyses

NIWS is working to build high-value datasets to support investment prioritization and hydrological modeling in Peru. As described in this section, this quarter, NIWS continued this effort through the development of a national evaporation dataset and a national wetland inventory. This data will strengthen the estimation of hydrological benefits of natural infrastructure measures at all levels (planning, project development, and watershed management).

Map existing data sources to meet information needs

Gridded evapotranspiration dataset

This quarter, NIWS continued our collaboration with Peru's national hydrometeorological service, SENAMHI, initiated in Q1, to develop national reference data on evaporation. The consultant has been executing their scope on track, this quarter producing evapotranspiration reference data on a national scale validated with existing databases and weather stations. The spatio-temporal database produced is an improvement on data from meteorological stations and significantly improves the national evapotranspiration database. Next quarter, NIWS will present this work in a research summary and webinar. Later on, the data will be submitted as an article to *Scientific Data*, a peer-reviewed, open-access journal published by *Nature*.

Prepare wetland inventories in priority watersheds

The wetland inventory is a collaborative effort between NIWS and INAIGEM. The immediate next step is the identification of fieldwork sites within the appropriate watersheds, however, no progress was made this quarter because INAIGEM prioritized the launch of its Glaciers and High Mountain Ecosystems Policy (see Activity 2.1.1). Now that the draft policy has been circulated, it is expected that the work regarding the wetland inventory will resume. Next quarter, NIWS will include associated fieldwork in the NIWS FY2022 work plan, specifically for the validation of the proposed methodology for the inventory within the six NIWS priority basins.

2.1.3 Strengthen, expand, and facilitate hydrological and socio-economic monitoring network

Assess monitoring equipment needs in existing iMHEA monitoring sites in priority watersheds (ChiRiLu & Piura), and install new hydrological monitoring equipment in learning sites

San Andres de Tupicocha monitoring system (Lurin watershed)

The MOU with the community of San Andrés de Tupicocha in Lima's Lurin watershed was signed in May, thereby formalizing a hydrological monitoring site in the area and allowing local monitoring and research efforts to begin. CONDESAN's technical team worked on an integrated monitoring plan, which was presented to and approved by NIWS supervisors; the plan was validated with the community in July.

The validation of the monitoring design initiated the i) purchase of equipment and ii) hiring of consultants. 20% of the equipment has been purchased so far, including sensors to measure humidity and temperature, and a set of drills. Two consultants have been hired to realize monitoring and research that will address knowledge gaps identified in the ChiRiLu research agenda. The first will use a drone to create a digital elevation model to study the impact of the recovery of high-Andean grasslands on gully and furrow erosion. The second consultancy will analyze the effects of the recovery of puna grasslands on soil and water regulation. Next quarter, NIWS will finish buying the monitoring equipment and begin implementing the hydrological monitoring system in coordination with the community.

Cañete monitoring system (Incubator)

Regarding the hydrological monitoring system in the Cañete watershed, MINAM completed the construction of the weir and started the installation of the protection fences, all with the technical supervision of NIWS. As reported previously, NIWS provided technical assistance in the design of the weir, the protective fencing for the equipment and purchased the monitoring equipment. Next quarter, CONDESAN personnel will visit the site to supervise the installation of the monitoring equipment and the completion of the protective fence installation. This monitoring system will generate information for the evaluation of the natural infrastructure in four micro-watersheds in the upper Cañete river basin.

NIWS is developing a monitoring training for MINAM and SERNANP project teams, which has been delayed due to the definition of the scope with MINAM. Next quarter, the design of the program will be finalized and the training will take place, allowing SERNANP's technical team to take responsibility for the operation and maintenance of the monitoring system in the upper river basin.

Strengthen the iMHEA network institutionally as a network and community of practice, providing technical support to member research efforts

The iMHEA network has undergone a recent change of leadership, with a newly installed regional coordinator, Luis Acosta, Director of Service Provision at SUNASS. Since assuming the role, the new regional coordinator formed a new Directive Board for iMHEA; three of its five members are associated with NIWS (Javier Antiporta, Dr. Wouter Buyatert, and Dr. Boris Ochoa-Tocachi). The board discussed the need to hold the next iMHEA assembly. The update of the iMHEA Methodological Guide for

Hydrological Monitoring of Andean Ecosystems is also a priority. This document is commonly used by MINAM, SUNASS, and many other public and private institutions across the continent. NIWS is providing comments on this document, its technical content of the guide should be finalized next quarter.

Produce and disseminate monitoring protocols

CONDESAN is also leading the development and validation of various monitoring protocols that will be incorporated into the iMHEA Hydrological Monitoring Guide, with support from Dr. Ochoa-Tocachi. These monitoring protocols will guide NIWS and external actors through designing monitoring systems for natural infrastructure for water security projects.

- **Precipitation and flow.** The consultant has finished 50% of the work on this protocol. Further progress has been delayed, as he was infected with COVID-19 and his father passed away from the virus. The technical product is expected to be completed next quarter. In addition to iMHEA staff, the reviewers for this document include MINAM and SUNASS personnel, since the publication will be a collaboration with these two institutions.
- **Ecohydrological monitoring.** The consultant is advancing on the development of this protocol; the technical product should be completed next quarter. A collaboration with SUNASS for this protocol has not yet been formally established, but is likely to occur, as SUNASS and ANA experts are part of the review team with iMHEA staff.

2.1.4 Facilitate active learning, knowledge management and capacity-building with natural infrastructure agenda partners

Prepare meta-analyses of current state of knowledge

This quarter, 2 scientific articles were submitted to journals and a policy brief was published, representing important progress in building consensus and addressing knowledge gaps in the scientific literature on natural infrastructure for hydrological ecosystem services.

- **NI and Disaster Risk Management.** A policy brief titled "*Natural Infrastructure for the management of erosion and flood risks in the Andes: What do we know?*" was published, which systematizes findings in scientific literature about the impacts of natural infrastructure on erosion, landslides, and flooding in the Andes. The main findings were presented in a webinar on June 1st for National Disaster Prevention Day (Section 1.3.4) and at the June meeting of the technical platform with government counterparts (Section 1.2.1). A scientific article on the same subject was submitted to the *WIREs Water* journal on June 15th, but was unfortunately rejected. The authors are planning to resubmit the article to another journal, *SOIL*, early next quarter.
- **High Andean grasslands.** The scientific article on the hydrology of high Andean grasslands has been submitted to the *Science of the Total Environment (STOTEN)* journal on June 19th. CONDESAN will address comments from the journal's reviewers once they are received. Next quarter, the associated policy brief will be published and announced in a webinar.

NIWS is continuing to reflect on how to strengthen public investment in natural infrastructure. Currently MINAM and MINAGRI have established the need to address gaps in ecosystem services, but the same has not been done for natural infrastructure for disaster risk management. There is an opportunity for NIWS to work with ARCC to establish this gap, which would support new investments in NI for DRM, this opportunity will be explored by NIWS in the next quarter.

In addition, Imperial College London has led the development of a knowledge product on the ecosystem services of natural and artificial high-altitude wetlands (bofedales) and the impact of human management on these ecosystems and their water provision. A draft version of this manuscript has been finished and is currently being reviewed by NIWS; it will be sent out for external scientific peer review in Q4. This product contributes directly to the Natural Infrastructure Research Agenda (Activity 2.1.1), as well as strengthening the offering of knowledge products on natural infrastructure interventions available to decision-makers, technical specialists, and researchers.

Develop criteria and processes for implementing demand-driven mechanism of address knowledge gaps

NIWS Scholarship Program

As reported previously, NIWS scholarships will be nested under ANA's 2021 National Water Culture Award (*Premio Nacional Cultura del Agua*), offering 13 grants for research projects and 10 for publications, for a total amount of US \$ 75,000. This quarter, ANA developed the virtual platform to host the PNCA, announce the contest, and receive applications; and prepared the evaluation forms to review the submissions. The web platform allows applicants and evaluators to respectively submit and select proposals dynamically and efficiently. The official announcement of the award scheduled for June has been postponed due to delays in internal approvals by ANA. The award should be announced sometime next quarter.

Figure 11. Screenshot of the web platform for the National Water Culture Award



International alliances for innovative research

Previous reported collaborations with the University of Vermont (Beverly Wemple) and the University of Giessen (Alicia Correa) have continued, but the research proposals they submitted to the National

Science Foundation (NSF) and the European Research Council (ERC), respectively, have been unsuccessful.

NIWS has also started a collaboration with the Red Iberoamericana de Siembra y Cosecha de Agua, particularly with the University of Málaga, Spain (Sergio Martos Rosillo) to make comparative studies of water harvesting practices in Hispanic-American countries and globally. This collaboration started in the context of the NIWS' participation in the Iberoamerican Workshop on Water Harvesting Systems organized by AECID (Spanish Agency for International Development Cooperation) in April. NIWS presented several experiences and studies including the systematic reviews on infiltration trenches, forestation, and *andenes* and terraces. Several people who have performed research with NIWS support on bofedales, grasslands and socioeconomic analysis attended the virtual conference.

Implement demand-driven mechanism to support research that contributes to prioritized knowledge gap

The following provides a brief update on the progress of various thesis projects supported by NIWS:

- Ida Vilca (UNALM) has submitted the first draft of her thesis on the influence of landscape structure on water regulation to her supervisors. The results show a significant and positive impact of the vegetation cover of grasslands and wetlands on the annual water regulation in the Apacheta basin, an important water source for the city of Ayacucho. Ida has received feedback from all her supervisors, except one. Next quarter, once the remaining feedback is received, Ida will submit the next draft to her university's review board.
- Samanta Onocuica (UNALM) finished mapping ecohydrological units in San Andres de Tupicocha. She will be in the field during the week of July 13th to present her work to the community and adjust sampling in the field.
- Sandro Arias (UNSAAC) is still waiting for the review of his thesis on the measurement of runoff in the Millpu Micro-watershed of Lake Piuray (Chincho-Cusco-Perú) by his university. Once the review is complete, he will complete the remaining administrative processes to finalize his thesis with the university.
- Engelbert Barreto (PUCP) is scheduled to travel to conduct interviews in Santiago de Tuna, Merced del Chautu and San Andres de Tupicocha from June 25th to 29th. His thesis involves agricultural census data.

Prepare guidance on ecosystem evaluation and restoration

As reported previously, CONDESAN and EcoDecision are working with MINAM on developing evaluation guides to assess the state of conservation of different types of native ecosystems. The technical content for the Páramos and Relict Forests ecosystems guides have been finalized; these two documents are now ready for final graphical edits from the communications team. The final layouts will be reviewed by MINAM before publication. The collaboration with MINAM ensures the guides will serve a wider audience outside NIWS.

IR 2.2: Information sharing to support decision-making on GI improved

2.2.1 Build and deploy tools and capacities for rapid assessments on NI priorities within performance-based frameworks, including systems integration for access to basic data critical for rapid assessments.

This quarter, NIWS continued to build and deploy tools to assess natural infrastructure measures. NIWS continued to develop functions of the HIRO tool, the hydrological modeling guide, and a database of plant species for ecosystem restoration. NIWS also deployed and refined existing tools to model benefits of NI projects. These efforts are described in detail below.

HIRO Rapid-Focus Tools for Natural Infrastructure Interventions

HIRO for Hydrological Ecosystem Services (HIRO-SEH)

This quarter, a first draft of the HIRO-SEH methodological guide was completed and reviewed by CONDESAN. The guide focuses on the use of HIRO for hydrological ecosystem services (water regulation and erosion control), which differs from the previous HIRO-GRD guide for disaster risk management. The HIRO-SEH methodological guide helps technical specialists use HIRO to identify potential locations for natural infrastructure and water security for project development, planning, and watershed management; and will contribute to the generation of knowledge about natural infrastructure and its impact on watersheds across Peru. Its publication is anticipated next quarter.

In addition to providing a step-by-step process, the guide also presents results from applying HIRO-SEH across Peru, identifying areas with high potential to provide hydrological ecosystem services (approximately 29 million ha for water regulation and 15 million ha for erosion control) as well as 20 million ha with existing conditions of extreme soil erosion. The analysis also identifies potential areas for the restoration (8.2 million ha) and conservation (6.7 million ha) of zones of hydrologic value at the national level; these results were based on HIRO-SEH and types of public investment in restoration and conservation from MINAM and MIDAGRI. Next quarter, CONDESAN will publish this data on an online platform for public access to view and download the data. CONDESAN will also publish these results in a paper on the potential for recovery and conservation of ecosystem services in Peru.

HIRO-GRD and HIRO-Ambiente

As reported previously, MINAM and NIWS have agreed to collaborate on HIRO-Ambiente, a web application on MINAM's website that will host HIRO-GRD. In preparation, NIWS met with MINAM and SENAMHI this quarter; MINAM presented their suggestions on updates to improve the HIRO-GRD model, with an applied case study in the Mantaro watershed. Their updated model (i) identifies areas at risk of landslides, floods and forest fires; and (ii) targets sub-watersheds and/or micro-watersheds based on the risk and exposure of local populations and their livelihoods. NIWS, MINAM, and SENAMHI also discussed the exchange of geospatial information necessary to update HIRO-GRD. Once these updates are completed, the new national results will be hosted on HIRO-Ambiente. The incorporation of HIRO-GRD as a MINAM service will allow the tool to have a greater scope, both in spatial terms

(expanded from previously covering RCC basins to a national scale), as well as in the users who will access the information.

Next quarter, CONDESAN will review HIRO-GRD and incorporate the suggested updates at the national level. Once approved, the model will be ready for HIRO-Ambiente. This quarter, NIWS drafted the final version of the ToR to contract a consulting team to implement the HIRO-Ambiente platform. These ToR will be published and the hired consultant will begin the work next quarter.

Develop and publish guide: Using Hydrological Models to Design Green Infrastructure in Peru

A final, extensive round of comments from CONDESAN, Imperial College London and Forest Trends were incorporated into the "Hydrological modeling guide for the evaluation of natural infrastructure". This document is now ready for final layout and graphical edits for publication. As reported last quarter, this document will be a flagship publication for NIWS, representing a significant effort from the team. As NI modeling has not yet been a highly developed field, this NIWS guide will stand out as the go-to modeling reference for this subject. More details on the structure of this document and its importance can be found in the FY2021 Q2 report.

Prepare recommendations on methodologies and models to estimate the green infrastructure gap and to evaluate green infrastructure projects, in terms of relevant Public Investment indicators

The scope under the consulting contract for the "Selection of Appropriate Species for Restoring Ecosystem Services related to Water" was completed, producing a species list to be used as new reference material for the design of natural infrastructure projects that involve vegetative cover, like reforestation. The species list is organized by ecosystem services (water regulation or erosion control), altitude/ecosystem, and slope aspect, which involved identifying 13 types of ecosystems of hydrologic importance in Peru, creating a preliminary list of plant species in each ecosystem, and ranking them by criteria (origin, ecosystem services, ecological and socioeconomic, and propagation). The consultant also created a database of nurseries within the NIWS priority watersheds that provide access to plant material for improving water regulation and soil erosion control.

Next quarter, this information will be organized for online access to encourage its use. For example, this information should serve as input for the consultant developing a catalogue of natural infrastructure measures, specifically in the elaboration of technical specifications for revegetation and reforestation projects. CONDESAN is also considering preparing an article on the relationship between the hydrological ecosystem services certain species provide and their certain morphological characteristics.

Quantify benefits of NI portfolios

The publication of the policy brief summarizing the modeling of the impact of natural infrastructure within 6 RCC watersheds has been put on hold, while CONDESAN's expert reviewers delve deeper into the modeling. The specialists are carefully reviewing the model before publishing any results, as the current results are very optimistic compared to other natural infrastructure estimates.

CONDESAN and Dr. Ochoa-Tocachi are also engaged in another modeling effort as part of the development of strategic case studies for the Quilca-Chili and Tambo-Moquegua watersheds (described further in Section 3.1.4).

Quantify benefits of NI projects

CONDESAN is developing a matrix for internal use to track data from all of the NI projects promoted through NIWS. This quarter, the hydrological benefits for each project have been added to the matrix and are available for access. The matrix will also help plan the timing and resources for the estimation of hydrological benefits. Natural infrastructure projects first require an estimation of hydrological benefits during the development of their project profile; an estimate is also necessary during the subsequent development of their *Expediente Técnico*. CONDESAN will be providing estimates for 4 projects that require this information between June and July. NIWS will be contracting a consultant to provide estimations for 10 additional projects, whose estimates are required between July and September. The ToR for this work has been published; a consultant will be selected in early Q4.

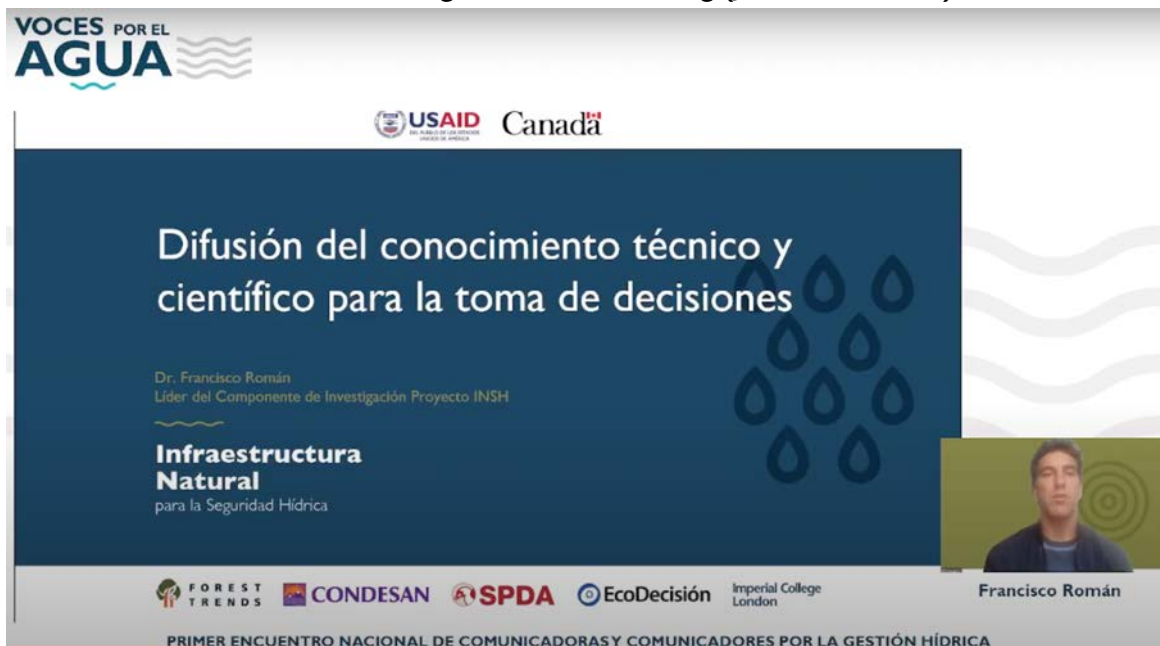
Currently, there is significant variability in the values obtained for these estimates, depending on the different methodologies used and a project's stage in the investment cycle. Given the need to reduce the uncertainty in these results, CONDESAN is identifying possible steps to improve and standardize the methodologies. A tentative work plan has been prepared outlining the next steps.

2.2.2 Train portfolio designers, project developers on appropriate use of existing models and tools for quantifying the benefits of Natural Infrastructure, including explicit consideration of risks and uncertainties

Virtual workshop on tools to support decision-making on NI

On June 15th, CONDESAN's Dr. Francisco Roman gave a presentation on the dissemination of scientific knowledge for decision making, as part of the Voces por Agua event for communicators organized by NIWS (for more details on the event see Activity 1.1.2). The presentation discussed the communicational needs that arise from research processes carried out by NIWS, using specific NIWS tools and publications as examples. This provided an important opportunity to disseminate these products among the press and other communicators, as well as engage and maintain their interest in NIWS' work.

Figure 12. Screenshot of Dr. Roman's presentation titled *Dissemination of Technical and Scientific Knowledge for Decision Making* (June 15th, 2021)



2.2.3 Support systems integration and capacity-building for accessing data for qualitative and quantitative assessments of natural infrastructure

Support systems integration and capacity-building for accessing data for qualitative and quantitative assessments of Natural Infrastructure

As reported in Q2, NIWS is developing a data management platform for the iMHEA network to manage its hydrometeorological data and provide online access to monitoring data. An external software developer has been hired for this work. This quarter, ICL reviewed the developers' work which adapted and extended the existing platform developed by FONAG. A first operational version of this data management system has been completed and is in the process of being installed. ICL is providing technical support for the installation and hosting of the server during the testing phase.

2.2.4. Build new models and methods to address assessment needs; adjust existing models to reflect learning from monitoring network and natural infrastructure agenda

Propose specific changes and improvements to CUBHIC (2.2.4)

As part of the work plan to improve the estimation of hydrological benefits (discussed in 2.2.1. Quantify Benefits of NI Projects), Dr. Ochoa-Tocachi has generated a new beta version of CUBHIC 2.0 for Forests and Forestation projects. The new CUBHIC 2.0 needs to be assessed and validated using observed data (e.g. from iMHEA) and incorporate recent developments in the NIWS project (e.g. the evapotranspiration data discussed in 2.1.2). Next quarter, these efforts will focus on validating the beta version of CUBHIC 2.0 and implementing these updates in the other CUBHIC models (grasslands, gochas, wetlands, infiltration trenches).

Develop Regionalization model for NI impact estimation

Dr. Ochoa-Tocachi has started co-supervising an MSc thesis from Imperial College (Anthony Ross) to update iMHEA's regionalization model. This work will be finished in Q4 FY2021 (late August) and aims to extract unit hydrographs for iMHEA's paired catchments and regionalize them to other ungauged catchments. In doing so, a functional statistical and simple model will be developed to estimate the impacts of different human practices (cultivation, grazing, afforestation), including conservation and protection of grasslands, forests and wetlands on water flows. Water flows, in this case, will be summarized in indices, particularly, in those that can be used to represent the particular catchment hydrological response (unit hydrograph).

2.2.5 Build a network/cadre of new women leaders and champions for NI through Women in NI Leadership Program

With regards to the Women Leadership Program for local female leaders involved in water management and natural infrastructure, this quarter NIWS announced the program and began accepting applications from candidates. The program will take place from July to February. More details can be found in Section 4.2.



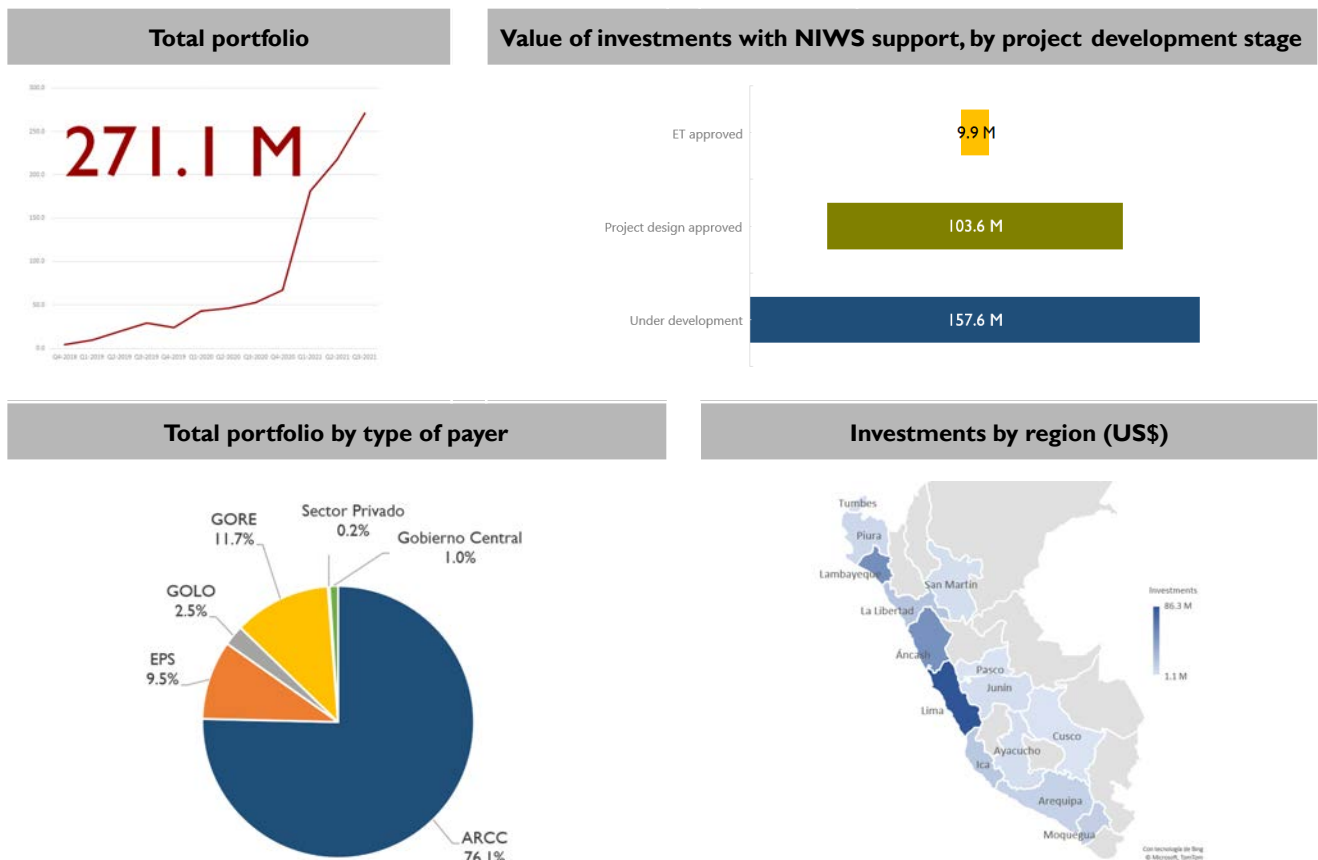
NIWS has provided technical support to the Regional Government of Arequipa in the preparation of the Technical File for the PIP Pichu Pichu, in Arequipa, Peru, a document that is in its final design phase (Photography: CONDESAN).

Objective 3: Natural Infrastructure Projects are Designed, Financed, and Implemented in Vulnerable Watersheds

This quarter over USD \$64 M of NIWS-supported investments were declared “viable” (i.e., project designs approved), bringing them to the final stages of project development and approvals. Additionally, we mobilized \$2.1 million in new public investment and \$180,000 in new private investment in natural infrastructure this quarter.

In total, our full portfolio of natural infrastructure investments in development with NIWS support is now valued at \$271 M (see Figure 13). We continue to advance our strategies with our priority clients to develop and mobilize these investments while building capacities to manage them and develop new investments in the future.

Figure 13. Current status of full NIWS investment portfolio under development



Expediente Técnico (ET) corresponds to the detailed work plan and final approvals before implementation.

RCC: Reconstrucción Con Cambios EPS: water utilities GOREs: Regional Governments GOLOs: Local Governments

IR 3.1 Portfolio of Natural Infrastructure Projects Designed

3.1.1 Rapid stock-take, needs assessment, and refinement of priority watershed milestones and identification of learning sites with local counterparts.

This activity has been completed; no further efforts will be implemented in FY2021.

3.1.2 Design and implement M&E programs in learning site in priority watersheds

This activity is now being described under Activity 2.1.3 in order to consolidate our discussion of hydrological monitoring activities.

3.1.3. Consolidate Project Design Toolbox and deploy broad capacity-building for project designers and evaluators in priority watersheds

Consolidate, publish and maintain Project Design Toolbox in web-accessible, user- friendly database

The Project Design Toolbox is an online platform that showcases tools and guidance relevant to natural infrastructure for project developers and evaluators in Peru. This quarter, changes were made to facilitate the use of the toolbox, particularly to improve accessibility of the CUBHIC tools. This toolbox will continue to be expanded and shared in the following quarter.

The "Methodology for the Identification, Categorization and Prioritization (ICP) of degraded areas" helps users identify areas where interventions in natural infrastructure can be implemented. This document is under a final revision; MINAM's editorial committee is providing copy editing. Once published, this tool will also be part of the Project Design Toolbox.

Develop and implement community of practice for project designers, including learning sites and other MERESE/NI leaders

As of this quarter, the online Community of Practice is now live, hosting all of the information and resources produced by NIWS in one space specifically for natural infrastructure professionals. 202 participants of previous NIWS courses have been registered on the platform. For more details on this activity, see 4.1.2.

Develop and Publish a Catalogue of Natural Infrastructure Measures

As previously reported, in Q2 NIWS defined the scope for the development of a Catalogue of Natural Infrastructure Measures. This quarter, NIWS published the ToR for this contract, which will begin next quarter. This catalogue is designed to support project developers in the final stages of project specification, streamlining *Expediente Técnico* development and improving quality control measures for natural infrastructure investments.

3.1.4 Develop a multi-sector, performance-based framework and baseline for Natural Infrastructure in priority watersheds

SEDAPAL Monitoring & Evaluation System

NIWS finalized development and submitted our proposed design for SEDAPAL's monitoring system to the water utility, which reviewed it, provided feedback, and requested clarification on certain points. SEDAPAL also reaffirmed its willingness to implement the system with its own funds, which will require additional presentations, technical assistance and monitoring by NIWS. Next quarter, NIWS will formally submit the final design to SEDAPAL. This will help them generate evidence of the impact of the interventions it implements with its MERESE projects.

Vilcanota-Urubamba Watershed (Cusco)

Progress was made in all three lines of work in the Work Plan established by NIWS and SEDACUSCO:

1. Capacity building for SEDACUSCO as beneficiaries and the Piuray-Ccorimarca Community as providers of ecosystem services: as a result last quarter's meetings, NIWS received SEDACUSCO's comments on the "Case Study of hydro-socio-economic impacts of natural infrastructure interventions for water security in the Piuray-Ccorimarca watershed (Cusco, Peru)" from Jackeline Pelaez, who is responsible for SEDACUSCO's MERESE program. Next quarter, these comments will be incorporated and the report will be published.
2. Technical assistance for the design of a social impact monitoring system
NIWS, SEDACUSCO and SUNASS's Cusco Office prepared ToR for the design of a social impact monitoring system for SEDACUSCO's MERESE efforts in the Piuray Ccorimarca Micro-basin. The objective is to identify indicators that evaluate the social impact of SEDACUSCO's MERESE at the local level, which will help SEDACUSCO optimize its interventions, understand community needs, and offer solutions which align with its mission. This work will improve local awareness of the direct benefits of MERESE to communities and improve relations between SEDACUSCO and the communities involved in implementing the project. It is based on a conceptual framework developed with SEDACUSCO using the Open Standards methodology in the first part of this fiscal year.
3. Technical assistance for the preparation of an Intervention Plan: NIWS has been coordinating with SEDACUSCO to define the technical aspects of possible natural infrastructure interventions for its water sources. Surface water sources, such as the Piuray Lagoon and Piuray-Ccorimarca micro basin, as well as underground sources, such as Piñipampa, are being considered.

Tambo-Moquegua Watershed (Moquegua)

NIWS is developing strategic case studies that quantify the potential hydrological and economic benefits of natural infrastructure portfolios in two NIWS priority watersheds: Tambo-Moquegua and Quilca-Chili. These will be the first modeling exercises that follow the framework being established in the NIWS hydrological modeling guide for developing policy questions, establishing hydrological objectives, and conducting the appropriate modeling effort.

This quarter, NIWS and GORE Moquegua's Natural Resource Department presented the scope of the strategic case study to the Regional Environmental Commission (CAR), along with its objectives, work plan, an approach for the hydro-economic analysis and a preliminary estimation of the hydrological benefits (Figure 14). Next quarter, NIWS plans to estimate the number of beneficiaries, define the approach to estimate the value of the benefits (in USD), estimate the cost of the suggested natural infrastructure interventions, and present a preliminary portfolio of natural infrastructure projects.

Figure 14. Preliminary Estimation of Hydrologic Benefits in Moquegua

Modelación hidrológica de intervenciones de Infraestructura Natural
Utilizamos SWAT para proyectar preliminarmente beneficios hidrológicos de intervenciones propuestas en la Cuenca Moquegua

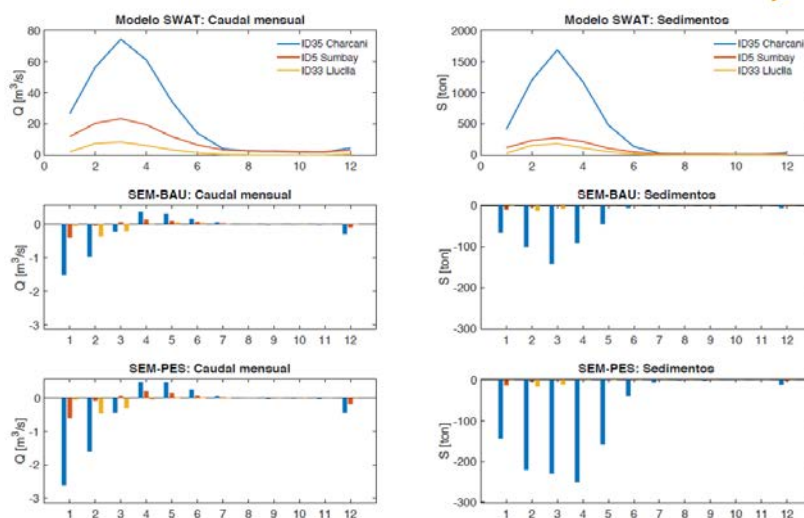


Quilca - Chili Watershed (Arequipa)

The strategic case study for Quilca-Chili is further along than that of Tambo-Moquegua; NIWS is already in the final stages of the hydrological modeling, which define areas of interest and their objectives, the benefits, targets, methodology, scenarios and next steps. The team is evaluating options for best communicating and interpreting the results of the hydrological modelling. As in Tambo-Moquegua, next quarter, NIWS is planning to estimate the number of beneficiaries, define an approach to estimate the value of the benefits (in USD), estimate the cost of the suggested natural infrastructure interventions, and present a preliminary portfolio of natural infrastructure projects. The work in these two watersheds has helped identify additional informational needs to support the development of natural infrastructure projects; for example, the potential impact of natural infrastructure in relation to certain watershed characteristics is needed to establish a realistic hydrological goal.

Figure 15. Preliminary modeling results in Quilca-Chili

Se logra reducir caudales pico en meses de lluvia en un año típico, con cierto incremento de caudal al inicio de estiaje



3.1.5 Leverage local capacity and technical tools to produce a "bottom-up" pipeline of performance-based projects

During this quarter, NIWS has continued to manage a pipeline of projects that respond to both the interests of natural infrastructure investors and the needs in vulnerable watersheds. As of this quarter, NIWS is supporting development of 30 project designs, representing an estimated total of \$157M in NI investments, as outlined in Table 3-I below. Advances in project development are reported in different sections, based on the project's stage, client and implementation mechanisms:

- Section 1.3.4. Project development (profile stage) for RCC
- Section 3.1.5. (below) Project development (profile stage) for SEDAPAL, EPS and GOREs
- Section 3.2. Project development for all other implementation mechanisms (IOARRs, direct contracts) and the private sector;
- Investment mobilization for project designs that have been declared "viable"

9 new projects have entered the NIWS portfolio. Three of these projects are being promoted by NIWS and SEDAPAL, through EGASE. NIWS is planning to hire technical teams to develop their *Ficha Tecnicas* next quarter. They are:

- **Bosques de Zárate.** This project includes revegetation, exclusion of livestock, and construction of infiltration ditches and qochas. This project was conceived during the *Advanced Course on the Identification and Development of Investment Projects in Natural Infrastructure* organized by NIWS last year.
- **Jicamarca.** This project involves restoring wetlands, rotational grazing, and installing fences. The initial development of this project also took place in the NIWS Advanced NI course.
- **Masaypata.** This project was initially elaborated during the course on the Identification and Development of Projects for the Recovery of Water Regulation Ecosystem Services, carried out by NIWS and SEDAPAL.

Other two new projects in the NIWS portfolio came out of meetings held between NIWS, SEDAPAR and SUNASS to identify SEDAPAR's responsibilities for the mobilization of investments within the

MERESE framework. The surface water resource for this utility is divided into two zones: regulated and unregulated. The regulated area covers the contributions by dams located in the upper basins; the unregulated area covers direct sources from nature.

- Quilca-Chili (Regulated): NIWS and SEDAPAR's technical team have started coordinating to prepare the ToR for the technical team that will develop this project next quarter.
- Quilca-Chili (Unregulated): NIWS has started to meet with SEDAPAR's technical team to select the technical team that will develop this project next quarter.

Two more projects come from the final works of the Natural Infrastructure Investment Course that NIWS developed in previous quarters:

- Preparation of FT for Rio Blanco: Based on coordination with SERNANP, NIWS will support the development of the *FT* for this project. This project will contribute to the recovery of a key micro-basin in the Salinas and Aguada Blanca National Reserve (RNSAB). NIWS will hire a consultant to start the development of its *Ficha Técnica* next quarter.
- Preparation of FT for Urcuyacu: Based on coordination with the Alto Mayo Special Project (PEAM) and GORE San Martín, NIWS will support the preparation of the *FT* for this project. NIWS is working together with PEAM to prepare TOR to hire a consultant to start working on the *FT* next quarter.

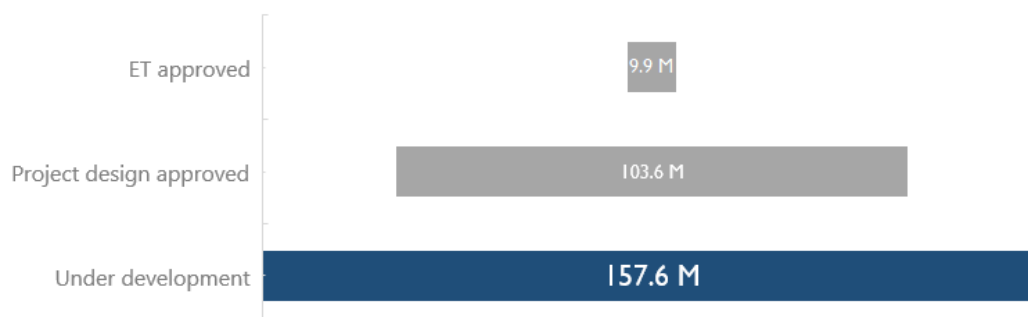
The last two projects to which NIWS will provide technical support are:

- Preparation of FT for Chaqocha: Based on coordination with the Municipal District of Chinchero, NIWS will support the development of the *FT* for this project, which will be part of EPS SEDACUSCO's 2019-2024 MERESE program. This project is one of the priorities in the tripartite agreement between the community, the EPS and the municipality. NIWS will hire a consultant to start the development of its *Ficha Técnica* next quarter.
- Preparation of FT for El Sauce: NIWS and GORE San Martín, through the Regional Environmental Authority (ARA), will support the preparation of the *FT* for this project. This proposal involves the recovery of the hydrological ecosystem services of the El Sauce lagoon, located in the province of San Martín. NIWS will hire a consultant to start the development of its *Ficha Técnica* next quarter.

Table I. Pipeline of projects under development with NIWS support

This table includes projects in the design development stage, before they are declared “viable” and approved as a public investment. Table 3-2 in Section 3.2.1 shows projects in more mature stages of development.

Value of investments with NIWS support, by project development stage (US\$)



Pipeline of projects under development

Estimated value

Abbreviated project name	Watershed	Payer	Estimated value
Mala	Mala	ARCC	43.6 M
Olmos	Olmos	ARCC	33.9 M
Cañete	Cañete	ARCC	21.9 M
Virú	Virú	ARCC	18.5 M
Cuenca Tambo	Tambo-Moquegua	GORE Moquegua	8.8 M
Huarmey	Huarmey	ARCC	7.2 M
Quilca-Chili Regulada	Quilca-Chili	SEDAPAL	3.3 M
San Juan de Tarucani	Quilca-Chili	SERNANP	2.8 M
Quilca-Chili No Regulada	Quilca-Chili	SEDAPAL	1.5 M
Piura	Chira-Piura	ARCC	1.5 M
El Sauce	Mayo	GORE San Martín	1.4 M
Marca IV	ChiRiLuMa	SEDAPAL	1.3 M
Bosques de Zarate	ChiRiLuMa	SEDAPAL	1. M
Curihuay	ChiRiLuMa	SEDAPAL	1. M
Yamecoto	ChiRiLuMa	SEDAPAL	0.9 M
Huitama	ChiRiLuMa	SEDAPAL	0.9 M
Huayca	ChiRiLuMa	SEDAPAL	0.8 M
Quipacancha	ChiRiLuMa	SEDAPAL	0.8 M
IOARR Tupicocha	ChiRiLuMa	GORE Lima	0.8 M
Chicama	Chicama	ARCC	0.8 M
Chancay	Chancay	ARCC	0.8 M
IOARR Machu Picchu	Vilcanota-Urubamba	GORE Cusco	0.8 M
Sangrar	ChiRiLuMa	SEDAPAL	0.7 M
Urcuyacu	Mayo	Proyecto Especial Alto Mayo	0.7 M
Marcacocha	ChiRiLuMa	SEDAPAL	0.5 M
Yantac	ChiRiLuMa	SEDAPAL	0.5 M
Jicamarca	ChiRiLuMa	SEDAPAL	0.5 M
Chaqocha	Vilcanota-Urubamba	EPS SEDACUSCO	0.3 M
Masaypata	ChiRiLuMa	SEDAPAL	0.3 M
Carumas	Tambo-Moquegua	Anglo American	0.1 M

Develop and implement strategy for scaled-up pipeline of projects for implementing SEDAPAL MERESE program

NIWS continued to provide technical support to EGASE for i) submitting initial project designs to the Project Development Unit and ii) the coordination with communities towards signing agreements. The current status of these projects as of Q4 are:

- Viable: This quarter, the initial project designs for the Aycagranga and Poccrococha projects were approved, and these projects were declared viable.
- Initial Project Design Under Review: The initial project designs for the Quipacancha and Huitama projects are currently under review by their respective Project Development Units.
- Signing of MERESE agreements: An agreement with the local community must be signed before a project design is submitted to the Project Development Unit. The Huayca and Yamecoto projects are currently in the process of signing MERESE agreements with their respective communities. The Yamecoto agreement is expected to be signed next quarter, after recent progress between SEDAPAL and the Huacos community.

PIP Tambo-Moquegua (GORE Moquegua).

At the suggestion of NIWS, GORE Moquegua decided to overhaul this project in Q1. This quarter, NIWS began the development of PIP Tambo-Moquegua. The location of the interventions had previously been defined based on a field diagnosis supported by HIRO. Once approved, this project will represent a significant contribution to the GORE Moquegua Investment Portfolio.

3.1.6. Unlock funds for effective, gender-equitable NI investments through targeted support through Incubator

Implement demand-driven support to unlock effective, gender-equitable NI investments through Incubator

Capacity Building for Water User Boards

This initiative, approved under the second round of the NIWS Incubator, aims to strengthen water user organizations' capacities and interests to engage in watershed conservation. As part of this work NIWS is engaged in developing a program for capacity building for female and male leaders of the Water User Boards. The program seeks to strengthen the management capacities of these organizations and promote the participation of women in these historically male dominant environments. This quarter, NIWS worked with ANA to prepare a concept note for the program, finalize ToR for its design, and subsequently contract a consulting team for the work, who has since submitted their work plan. Next quarter, the consultant will collect input from the water user boards.

NIWS has also developed a training guide for the Institutional Promotion, Training and Image Units (UPCII) of the water user organizations, which was submitted to ANA last quarter. Once ANA provides their approval, the final educational layout will be finalized.

IR 3.2: Diverse and gender-equitable financial mechanisms and incentives (public and private) for investment in Natural Infrastructure mobilized

3.2.1 Assure early implementation of MERESE tariffs through SNIP, Invierte.Pe, and direct contracts (new mechanism)

Provide technical assistance by public investment specialist to address bottlenecks in PIP approvals in priority watersheds

NIWS provided technical assistance to mobilize over USD 113 million of mature investments (see Table 3-2), up from USD 52 million in Q2. These projects all have at least secured funding and secured approval (“viability”) for the full project design. To advance to implementation, they need additional support to ensure they obtain final approvals from their funding sources and local communities, and develop a detailed work plan (“*expediente tecnico*”) for implementation.

Although COVID-19 restrictions have inhibited some progress in mobilizing investments this quarter, 8 of the 27 projects receiving direct NIWS support achieved new milestones. These 8 projects are summarized here; additional advances in the rest of the portfolio are described in the following section:

Investments mobilized this quarter:

- **PIP Pusmalca (GORE Piura):** After the approval of the *Expediente Técnico* last quarter, the project budget has been scheduled by GORE Piura and is ready for execution. The implementation is currently scheduled to start in 2022, however NIWS is negotiating with GORE Piura to expedite the process to start this year.
- **Tumilaca Pilot (Anglo American):** The mobilization of these funds are underway, as Anglo American opened the call for bids to hire a third-party for its execution. The approved USD \$180,000 budget will be used to implement a nursery and reforest 20 hectares with native species. The exact location of the pilot will be defined next quarter once the hire is made, as this requires more detailed work.

Projects declared viable this quarter:

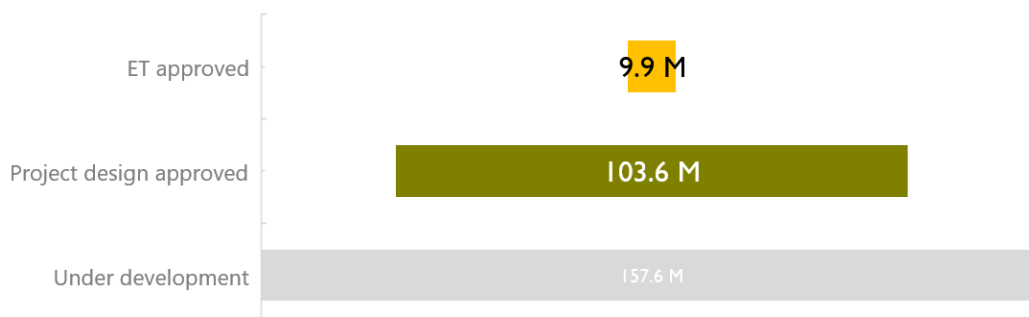
- **PIP Macará-Quiroz (GORE Piura):** This PIP was declared viable by GORE Piura. NIWS is preparing its *Expediente Técnico*. The main components of this project are reforestation with native species, implementation of a hydrological monitoring system, and training and technical assistance for proper ecosystem management.
- **FT Poccrococha (SEDAPAL).** This PIP was declared viable by SEDAPAL. NIWS is preparing TOR to hire a third party to develop its *Expediente Técnico*. The main components of this project are revegetation with native plants, exclusion of livestock, construction of infiltration ditches, restoration of amunas, and training and technical assistance for proper ecosystem management.
- **FT Aycagranga (SEDAPAL).** This PIP was declared viable by SEDAPAL. NIWS is preparing

TOR to hire a third party to develop its *Expediente Técnico*. The main components of this project are revegetation with native plants, exclusion of livestock, construction of infiltration ditches, and training and technical assistance for proper ecosystem management.

- **Casma (ARCC)**. This project was declared viable by MIDAGRI within the framework of the ARCC Integrated Plans. NIWS' investment team is coordinating with RCC to define the next steps to bring this project toward implementation. The main components will be reforestation with native species, gully control, and training and technical assistance to local authorities and residents for the proper management of ecosystems.
- **Lacramarca (ARCC)**. This project profile was declared viable by MIDAGRI within the framework of RCC. NIWS is coordinating with ARCC to support its implementation. The main components will be reforestation with native species, gully control, and training and technical assistance to authorities and local residents for disaster risk management of ecosystems.
- **Matagente (ARCC)**. Like the previous two, this project has been declared viable by MIDAGRI. NIWS and ARCC are coordinating the best way to move forward towards its implementation. The main components will be reforestation with native species, the construction of infiltration ditches, the installation of living barriers, technical assistance to authorities and local residents for disaster risk management of ecosystems, and the proposal to create a Watershed Resource Council.

Table 2. Projects receiving direct NIWS technical and financial support to advance towards implementation

Value of investments with NIWS support, by project development stage (US\$)



ET approved (US\$)

Abbreviated project name	Watershed	Payer	Value (US\$)
Chancay-Huaral	Chancay-Huaral	GORE Lima	5.34 M
* Pusmalca	Chira-Piura	GORE Piura	2.10 M
Moyobamba	Mayo	EPS Moyobamba	1.08 M
Milloc	ChiRiLuMa	SEDAPAL	0.91 M
Mitsubishi	Tambo-Moquegua	Mitsubishi Foundation	0.30 M
* Tumilaca	Tambo-Moquegua	Anglo American	0.18 M
Bienes y Servicios - San Antonio	ChiRiLuMa	SEDAPAL	0.01 M

* Expediente técnico (ET) approved this quarter

Project design approved (US\$)

Abbreviated project name	Watershed	Payer	Value (US\$)
* Casma	Casma	ARCC	25.96 M
* Matagente	Matagente - Ica	ARCC	17.13 M
Zaña	Zaña	ARCC	16.65 M
* Lacramarca	Lacramarca	ARCC	16.52 M
Distrito Carumas	Tambo-Moquegua	Municipalidad Distrital de Carumas	3.90 M
Pichu Pichu	Quilca-Chili	GORE Arequipa	3.81 M
Huamanga	Ayacucho	GORE Ayacucho	3.81 M
Huamantanga	ChiRiLuMa	SEDAPAL	3.14 M
* Macará-Quiroz	Chira-Piura	GORE Piura	3.07 M
Tumbes	Tumbes	ARCC	2.08 M
El Faique	Chira-Piura	GORE Piura	1.23 M
Cachiyacu	Mayo	EMAPA San Martín	0.88 M
* Poccrococha	ChiRiLuMa	SEDAPAL	0.86 M
Intercuencia Laraos	ChiRiLuMa	SEDAPAL	0.85 M
* Aycagranga	ChiRiLuMa	SEDAPAL	0.76 M
Pucullo	ChiRiLuMa	SEDAPAL	0.67 M
Ararac	ChiRiLuMa	SEDAPAL	0.66 M
Curicocha	ChiRiLuMa	SEDAPAL	0.61 M
Cashapampa	ChiRiLuMa	SEDAPAL	0.58 M
Llamacocho	ChiRiLuMa	SEDAPAL	0.47 M

* Project design approved this quarter

Support Mobilization and Implementation of PIPs - Regional Governments

The following describes additional progress made in advancing PIPs with regional governments:

- **Secure Funding for Chancay-Huaral:** Since the approval of the *Expediente Técnico* at the end of last year, NIWS has been looking for collaborations with GORE Lima for its budget allocation. Tax breaks for public works (*Obras por Impuestos*) is being evaluated as a likely option, and starting to be discussed between NIWS, private partners, and GORE Lima.
- **Secure Funding and Prepare ET for PIP Huamanga:** NIWS began the elaboration of the *Expediente Técnico* for PIP Huamanga, an important project that integrates watershed management and a gender perspective. This quarter, NIWS has hired a consultant who has completed the definition of the technical approach and work plan, and is currently preparing a diagnosis of the area of intervention and the beneficiary population, taking local context into account. NIWS visited the site with the consulting team and the GORE, in order to more accurately scope the ET and make corresponding adjustments to the work plan. Furthermore, NIWS secured important funding commitments from GORE Ayacucho for this project, including 85,000 soles of co-financing for the preparation of complementary studies needed for the ET, and the inclusion of the project budget in the GORE's Multiannual Investment Programming (PMI) for 2022-2024.
- **Preparation of ET for PIP El Faique:** As reported previously, the first consultant for the preparation of this *Expediente Técnico* was dismissed. This quarter, NIWS hired a new consulting team that has already submitted their detailed work plan.
- **Preparation of ET for PIP Macara-Quiroz:** This project was declared viable this quarter by GORE Piura with a budget of USD 3.2 M. In anticipation of this approval, NIWS has already hired a consulting team that will prepare the *Expediente Técnico* starting in July. The preparation of the ET will be complex as this project has a high cost, and covers 1606 ha spanning 6 communities, which requires participation from each of their respective local governments.
- **Preparation of ET for PIP Pichu Pichu:** After NIWS prepared the PIP Pichu Pichu Technical File last quarter and submitted it to the formulating unit of GORE Arequipa, this entity made observations. This quarter NIWS lifted the observations and will be submitted to the supervision area of the Arequipa Regional Government for approval, a process that will also be technically supported by NIWS.
- **Preparation of ET for PIP Torata:** No further efforts towards the mobilization of this project will be made during this fiscal year, due to a lack of financing.

Support Mobilization and Implementation of PIPs - Water Utilities

- **Secure funding for PIP Moyobamba:** The *Expediente Técnico* for this project was approved in Q2. At the beginning of this quarter, NIWS supported EPS Moyobamba in drafting a letter to MINAM to request funds for its implementation, which was since denied. Instead, NIWS is now promoting a co-execution agreement between EPS Moyobamba and the Municipality of Moyobamba to allocate this budget in order to ensure its implementation.

- **Preparation of ET for PIP Cachiyacu.** This work was recently reinitiated in February of Q1, after delays due to quality of work and COVID-19. This quarter, NIWS completed a first draft of the *Expediente Técnico*, to which minor adjustments are currently being made by NIWS, EPS San Martín and ODS San Martín. Next quarter, NIWS is planning to provide technical support to the EPS for its approval and diffusion among those involved in the process.
- **Preparation of ToR for ET (various):** Currently NIWS is responsible for drafting 8 ToR for the development of *Expedientes Técnicos*: 6 projects described in Section 3.1.5. (Aycagranga, Poccrococha, Quipacancha, Huitama, Huayca, Yamecoto), as well as two projects declared viable last quarter (Ararac and Pucullo). This quarter, NIWS prepared the ToR for four of them (Ararac, Pucullo, Aycagranga and Poccrococha) and sent them to EGASE for review. NIWS also supported SEDAPAL in responding to questions made by applicants bidding for the preparation of *Expedientes Técnicos* for 3 projects in San Juan de Iris.

In addition to project development, NIWS is preparing a training activity in the field called 'School for Project Executors' to take place after the implementation of PIP Milloc, which will serve as an example for the training. NIWS is preparing ToR for the development of this training, which will strengthen the capacities of people executing natural infrastructure interventions such as platforms, *amunas*, infiltration ditches, *gochas* and reforestation, within the framework of MERESE - SEDAPAL. This training aims to increase the number of people prepared to execute these types of projects towards reaching a critical mass necessary for their wide-scale implementation. NIWS hopes to ensure adequate implementation of the interventions that have already been developed, including a greater representation of local communities as partners in the executors of these projects.

Support development and implementation of pilot MERESE through direct contracts

NIWS advanced this quarter in defining criteria for projects to be implemented through Goods and Services contracts with SEDAPAL, as alternatives to public investment projects. These criteria have been developed considering the NI interventions prioritized by SEDAPAL and include a maximum budget of US\$ 10,000, accessibility of the project site, and a project area equal to approximately 1 hectare. These criteria help to define the pathway for this contract mechanism and facilitate its use.

In addition, NIWS has been developing 5 proposals for interventions using Goods and Services contracts. NIWS has identified 2 interventions in the San Antonio Peasant Community, 1 tree nursery, and 2 areas of *andenes* sectors, which have been approved by EGASE SEDAPAL and will follow its procedures for reviews, approvals, and implementation route.

Develop guidance on public investment in natural infrastructure through "investments of optimization, marginal expansion, relocation and rehabilitation" (IOARR)

NIWS is also continuing to support the development of the project profiles and *Expediente Técnicos* for two IOARR projects:

- **Preparation of Project Profile and ET for IOARR Machu Picchu:** During this quarter, completed the ET for the "Rehabilitation of Ecosystems affected by forest fires in the Historic

Sanctuary of Machu Picchu” project, known as IOARR Machu Picchu. This document has been submitted to GORE Cusco’s Natural Resources and Environment Department for approval. NIWS is also supporting the signing of the tripartite agreement with SERNANP and GORE Cusco, which would register GORE Cusco as the owner and secure the project’s budget in its PMI.

- **Preparation of Project Profile and ET for IOARR Tupicocha:** This quarter NIWS completed the ET for the "Rehabilitation of Amunas in the community of San Andrés de Tupicocha, province of Huarochirí, department of Lima" project, known as IOARR Tupicocha. This document is now being reviewed by GORE Lima. The project development team is currently following up with the community regarding their internal sustainability policies, and coordinating with the Municipal District of Tupicocha for the final presentation of the ET. Next quarter, NIWS will follow up with GORE Lima for the approval of the ET.

Mobilize investment for natural infrastructure through public trust fund

NIWS continued this quarter to explore options for increasing the efficiency and agility of SEDAPAL’s MERESE implementation through partnerships with third parties. There are currently multiple options in development, which NIWS is supporting SEDAPAL to explore and also working with USAID’s Public Financial Management for Payments for Ecosystem Services project to comparatively evaluate. This quarter, Forest Trends initiated exploration of an arrangement for SEDAPAL to transfer funds to GORE Lima to accelerate implementation of its MERESE funds, at a scale of up to USD 30 M but beginning with an initial tranche of about PEN 2.8M. NIWS conducted a field visit to evaluate the feasibility of investing the funds in the execution of 7 qochas in the headwaters of the ChiRiLu basins. Forest Trends continues to provide institutional and technical assistance while SPDA is supporting assessment of legal issues potentially associated with this transfer.

3.2.2 Develop and operationalize new mechanisms for channeling Natural Infrastructure funds (e.g. private sector, ProInversion) and coordination across sectors (e.g. trusts)

Develop business case and mobilize private sector funds for natural infrastructure investment

In Moquegua, NIWS continued to participate in the Collaborative Regional Development platform. This quarter, NIWS presented its work approach, portfolio of activities, pilots and expectations in Moquegua to the group (for more detail, see 3.1.4). This was the first time representatives from every institution in the platform attended one of its meetings (SERFOR, GORE Moquegua, MINAM, ENGIE, Anglo American, Mitsubishi, Colegio de Ingenieros, for example), which means the NIWS’ presentation reached an important audience and is also evidence of the current interest in the platform. In the coming months, NIWS will support efforts to define the platform’s branding in order to strengthen its visibility. NIWS has encouraged the representation of women in the platform and is supporting the identification of female representatives.

Mobilize funds for natural infrastructure through Reconstrucción Con Cambios

As reported in Section 1.3.4, this quarter we saw three more project designs for natural infrastructure

investments by Reconstrucción Con Cambios (RCC) declared “viable”, representing almost USD 60M of investments in three of RCC’s 17 priority watersheds. Eight more investments developed with NIWS’ support being evaluated by MIDAGRI for similar approvals, and several more are in development. Additionally, NIWS is providing technical assistance to ARCC for actions in natural infrastructure that are being included in investments in (primarily gray infrastructure) riparian defense systems.

As the first natural infrastructure investments under RCC are declared viable, they are now moving into the stage of Definitive Studies development, under the supervision of the Government to Government agreement between Peru and the United Kingdom. This quarter, Forest Trends began meeting weekly with the UK Delivery Team and ARCC as part of efforts to develop a set of methodologies and quality control standards that will be included in the Terms of Reference that will be used to contract the consulting firms who will develop the Definitive Studies. NIWS is leading development for a series of these methodologies--such as a guide for the design of technical assistance, training and raising awareness for the beneficiaries of natural infrastructure projects and a process for defining specific locations and interventions considering fieldwork and local consultations--and piloting them in the first Definitive Studies to be developed for RCC investments in natural infrastructure. NIWS is also preparing a plan to meet the demand for plant species needed for reforestation and revegetation, in order to implement scaled investments in natural infrastructure across all RCC watersheds. These efforts will continue next quarter.

Next quarter, NIWS will also support the procurement process for the selection of the consulting firms to develop the first set of Definitive Studies in the Zaña and Tumbes watersheds.

MIDAGRI MERESE Fund

Last quarter, the Ministry of Agriculture and Irrigation (MIDAGRI) expressed interest in creating sustained funding for MERESE for watershed services in the agricultural sector. This quarter, NIWS coordinated with ANA and MIDAGRI to evaluate the various pathways available to make this happen. NIWS submitted a legal report containing viable alternatives for various aspects of the program:

- Objective: Funding for the conservation, maintenance, operation and recovery of watersheds.
- Legal Mechanism: Either a supreme decree or law.
- Financing Mechanism: Either a fund, a results based budget program, an institutional budget program, cooperation agreements, or exclusive relationships.
- Source of financing: Either public funding or fees charged to water users.
- Administration of resources; AGRORURAL could figure as a recipient and administrator of the funds for the implementation of MERESE.

Next quarter, NIWS will follow up on the report and address any additional comments from MIDAGRI.

3.2.3 Engage and mobilize lenders and financial investors to provide pre-investment capital for natural infrastructure project design.

Pilot cross-sector partnerships to cover pre-investment finance needs

As reported last quarter, NIWS has been facilitating an agreement through which Anglo American will co-finance pre-investment studies for a natural infrastructure project in Carumas, Moquegua, if the

Regional Government commits to financing the execution. This quarter, the Municipal District of Carumas officially transferred their responsibility as the executing unit of the project to GORE Moquegua, by means of a municipal council agreement. Consequently, the GORE's Department of Infrastructure prepared a draft agreement between GORE Moquegua, MD Carumas, Anglo American, and Forest Trends, which is currently being reviewed by the parties involved. A work agreement to initiate the tasks is expected to be finalized next quarter. This change of hands should remove the holdup that has been blocking the execution of this project.

3.2.4 Design and facilitate implementation of financing mechanisms, governance platforms, and coordination bodies addressing key gaps

SEDAPAL Community Relations

NIWS has continued to work on a strategy for coordination between SEDAPAL, public and private actors, and local communities regarding MERESE in ChiRiLuMa, whose objective is to formalize a MERESE agreement between SEDAPAL and the communities responsible for carrying out the projects. This quarter, NIWS has been identifying aspects of the proposed community relations strategy that should be validated in the field, such as project location, community livelihoods, and basic infrastructure (potable water/sewage systems). NIWS is incorporating lessons learned from previous MERESE agreements into this community relations strategy to streamline the process.

MERESE Good Governance Platforms

NIWS also finished preparing a strategy for coordination between SEDAPAL, local governments, and private actors at the district, provincial and regional levels within the framework of MERESE in ChiRiLuMa. The strategy developed will map the actors involved in SEDAPAL's 2021 MERESE projects, identify key coordination issues between them, and identify natural infrastructure interventions that are important for integral water resource management. The strategy will identify priorities including developing comprehensive projects that contain productive and sustainable activities; addressing the lack of knowledge about MERESE and the Good Governance Platform within the communities; and training communities in the field, not just their representatives. This process will help make the MERESE projects visible to the communities and local governments, and thereby increase the confidence and credibility needed to sign the MERESE agreements.

Regarding SEDACUSCO, NIWS prepared ToR for the design of a social impact monitoring system for its MERESE efforts in the Piuray Ccorimarca Micro-basin. This work is described in Activity 3.1.4 (Vilcanota-Urubamba Watershed).

3.2.5. Develop, seed, grow, and capture NI Business Models, linking productive economic activities with NI financing

NIWS hired a consultancy to coordinate GORE San Martin's forest conservation activities with local beekeeping organizations and to improve their technical capacities. The first part of this consultancy has been completed, which is a diagnosis of the impact of COVID-19 on beekeeping and an analysis of local

technical capacity. Next quarter, the consultant will analyze the participation of women in beekeeping organizations, as well as design and implement a training plan that responds to capacities required. The consultant will evaluate opportunities to collaborate these beekeeping efforts with GORE San Martín, the National Beekeeping Board and the Mayo Sub-watershed Committee.

IR 3.3: Improvement of the evidence base of the hydrological and socioeconomic impacts of green infrastructure interventions

3.3.2 Document learning site and produce and ex ante hydro-economic analyses

This quarter, NIWS started developing a methodology for estimating the number of jobs (day-wages) that will be generated by SEDAPAL's MERESE projects, specifically for the 14 PIPs that already have a *ficha tecnica*. The estimation will be based on the number of hours of work per person for each of the activities proposed in the projects, cross-checking these results across the projects, and comparing them to similar activities in other initiatives. The estimation of the number of jobs created in the communities will improve the data on the benefits of the MERESE projects and strengthen the economic analysis of their design and execution.

NIWS also conducted a field visit to the Milloc Project, in order to obtain primary information related to the indirect benefits generated at the local level by this initiative. This methodology will be validated by experts to strengthen its technical standing.



Maria, 53, works the land to create a water channel to help move water to her land and improve her potato production. Photo taken in Junín, Peru, in 2019, participant in the photo contest organized by NIWS "Gender and Water Security". (Photography: Ana María Castañeda Cano)

Cross-Cutting Strategies and Project Administration

4.1: Monitoring, Evaluation and Learning

4.1.1 Monitoring Evaluation and Learning Plan

Updated Monitoring, Evaluation and Learning Plan

Two new indicators were added to the Monitoring, Evaluation and Learning Plan last quarter. This quarter, the NIWS monitoring team held meetings with capacity building and investment specialists to update them on the changes and their impact on monitoring activities. In the following weeks, the monitoring staff will continue to schedule briefings for the other project members, which cover the indicators, targets and results according to the Monitoring, Evaluation and Learning Plan.

Use of Information Study

The use of information survey, whose methodology was presented in Q2, concluded on April 30th. The main objective of this virtual survey was to collect data about the use of information disseminated by the NIWS project from people who have participated in various NIWS events. This quarter, Forest Trends analyzed the results and prepared a draft report summarizing the survey. In total, the survey received 813 responses (488 men, 324 women, 1 unreported). The preliminary results show that 99% of those surveyed reported that the information disseminated by NIWS was useful, and 85% reported having used the information (e.g. for technical studies and research; capacity building and technical assistance; internal or external institutional communication; policy; public outreach; and/or project development). The top three answers for which knowledge products were most useful were: #1 information about project development, #2 all of the information, and #3 information about wetlands. Although the survey results were anonymous, the report breaks down the results by type of institution (public, academic, private, or NGO). The survey also collected information about preferences for future information.

This information was used to report data for USAID project indicator *EST-2: Number of people using climate information or implementing risk-reducing actions to improve resilience to climate change as supported by USG assistance (EG.11-6)*, and will also help improve NIWS' strategies for generating and sharing information for decision-making.

Project Information System

NIWS has continued updating and incorporating data into the information system based on new project data and information for the new indicators described above. These efforts have focused specifically on the monitoring and registration of data related to investment mobilization such as: total project area, interventions in natural infrastructure, number of beneficiaries, and jobs created. This effort has improved the processes for sharing information, as well as follow-up and monitoring.

Preparation for Mid-Term Evaluation

Forest Trends participated in a series of meetings convened by USAID to contribute to the Terms of Reference for NIWS' mid-term evaluation, which is slated to begin next quarter. Likewise, Forest Trends and our consortium partners provided information that the evaluators will need and began to organize information to be available once the evaluation begins.

4.1.2 Capacity-Building Strategy and Action Plan

Ongoing courses

MOOC “Sustainable Water Management” with ENAP and SUNASS

As discussed in Section 1.3.1, NIWS organized this sustainable water management course implemented on the ENAP platform. So far, the course has far exceeded the original expectations for participation.

Journalist Course with SPDA and Gustavo Mohme Llona Foundation

As described in Section 1.1.2, NIWS helped organize this course aimed at strengthening journalists' ability to report on water resource management and natural infrastructure issues. Further details can be found in that section.

Additional Initiatives for Capacity Building

Technical Assistance to implement final projects from the Agrorural Introductory Course

In Q1, NIWS executed the Introductory virtual course with Agrorural, which culminated with participants' submitting proposals to include natural infrastructure within their institution's activities. This quarter, NIWS hired a consultant to support the implementation of 3 of those proposals. The consultant defined a strategy for this process which includes i) providing feedback on the original 11 proposals, ii) selecting 3 proposals for implementation and providing them with technical assistance, and iii) compiling a document of lessons learned that would facilitate the execution of similar initiatives across the rest of Agrorural's offices. Next quarter, Forest Trends will coordinate with the consultant and Agrorural to initiate these efforts, which will support the institutionalization of NI in Agrorural and transition individual learning to institutional capacity building. The main challenges of this work are instability as a result of an ongoing restructuring in AgroRural and resulting changes in staff, just before the change of administration.

Community of Practice for Project Developers

The Community of Practice platform developed by NIWS is now live. The platform consolidates all the information produced by the project and provides a virtual space for collaboration about natural infrastructure, accessible to participants who have graduated from NIWS courses. This quarter, before the official launch of the platform, NIWS registered 202 people on the platform, including 61 women. In

the first two weeks, 25% of them have been active on the platform and updated their personal data. The two materials with the highest number of views are the Q&A on IOARR and the CUBHIC Grasslands tool (Figure 16). The inaugural session of the platform is scheduled for August 5th, during which the current state of NI and relevant literature will be discussed.

Figure 16. Statistics from the NI Community of Practice as of Q3



Natural Infrastructure Virtual Classroom

This year, NIWS updated the version of the Moodle platform used by the Natural Infrastructure Virtual Classroom. The new version (Moodle 3.10) has a greater variety of course formats to choose from, as well as updates to the activities and resources that can be created and used. A new format for the NI Virtual Classroom was implemented, which improves the display of content across a variety of devices (ie. laptops, tablets, and smartphones). The new format also improves the organization of information, which requires less clicking for users to navigate to the online resources. These changes considerably improve the user experience of the NI courses.

Voces por el Agua Event

The capacity building team supported the three workshops realized as part of the *Voices for Water* event for communicators (described in Section 1.1.2) by developing the associated methodological guide to support the event and creating a dedicated space on the NI Virtual Classroom to enroll participants and upload resources.

Capacity Building for Water User Boards

As described in Section 3.1.6, NIWS is working to strengthen water user organizations' role in watershed conservation. Further details can be found in that section.

4.2 Gender

Mainstreaming Gender in ANA and SUNASS

SUNASS

On May 3, 2021, Peru's national water utility regulator, SUNASS, approved its Gender Equality Policy through Board Resolution No. 011-2021-SUNASS-CD, thus formalizing its institutional commitment to close gender gaps in the institution. While Peru's National Gender Equality Policy, approved in 2019, requires all public institutions to mainstream gender, SUNASS is just *the third public institution* in Peru to formalize its own institutional policy on gender equality. Moreover, *SUNASS' gender policy goes further* than the gender declarations included in the other institutional policies by establishing the following specific institutional commitments:

1. Mainstream the gender approach and guarantee the principle of non-discrimination in the policies and institutional management of the Sunass.
2. Guarantee equal rights and opportunities among Sunass public servants, incorporating the gender approach in the institutional culture, eliminating any form of gender discrimination, respecting diversity in all its expressions, eradicating all kinds of violence and sanctioning sexual harassment in the workplace.
3. Recognize and respect diversity, including based on ethnic origin, culture, religion, sexual orientation, disabilities or belonging to any other minority group deserving of special protection.
4. Elaborate and implement the necessary measures to guarantee the incorporation and application of this policy in the different management areas of the Sunass.

NIWS contributed substantially to the drafting and scope of this policy, which describes commitments reflected in SUNASS' 2021 work plan for mainstreaming gender. SUNASS first committed to developing an institutional policy on gender equality at the first National Forum on Gender Equality and Water Security, hosted in 2018 by NIWS, USAID, Canada, and government counterparts.

Although there are some delays in certain cases, in general the activities within the 2021 gender mainstreaming plan are being executed with good progress, thanks to SUNASS' Working Group for Gender Equality and Services Provision Department. Both areas have responsible teams, monitoring mechanisms, and coordinate regularly with NIWS regarding the implementation of activities. Progress has been made regarding the hiring of consultants that will be in charge of incorporating the gender approach in the design and implementation of the MERESE-H and providing technical assistance to implement the 2021 plan for mainstreaming gender. These contracts are now ready and expected to be

signed in early Q4. As part of the technical assistance provided in-house, NIWS has facilitated coordination between SUNASS' Gender Equality Work Group and MIMP's General Directorate against Gender Violence; the latter has shared guidelines to implement mechanisms for the prevention and punishment of workplace sexual harassment.

ANA

This quarter, ANA's Gender Equality Commission has met on a weekly basis to review the Institutional Gender Diagnosis and proposed Gender Mainstreaming Plan that NIWS presented last quarter. The hope is that ANA reconsiders institutional procedures and takes ownership of these documents through this process, which would demonstrate real change beyond the people who were already sensitive to gender issues from the start. However, there appears to be some resistance to the implementation of the proposed changes, evidenced by the slow response, resources dedicated to the effort, and the fact that the Gender Equality Commission is re-working the documents according to its own perspective and perceived feasibility of implementation. The revision of both documents was scheduled to be completed in mid-June, but the commission is now expecting to finish reviewing the Gender Diagnosis early next quarter and move on to the proposed plan afterward.

The resistance to implementation may be due to higher priorities for ANA, such as the upcoming change in administration, as well as fear of affecting the institution's reputation with a diagnostic that shows limitations regarding gender issues. It is important that the new versions of the documents are drafted in a participatory manner and include an ongoing evaluation mechanism with roles and responsibilities clearly stated. The latter is particularly important as the current point of contact assigned to NIWS has had limited institutional influence. Next quarter, NIWS will resume technical assistance to support the implementation of the actions that ANA prioritizes, as soon as the revision of the documents are complete.

Promoting women's participation in decision-making on water

As reported previously, NIWS is preparing the Local Women's Leadership Program for water management, which directly targets leaders in local communities. The same team that implemented the previous course was hired for this version. Early this quarter, NIWS approved the work plan they developed, which involved adjustments to the implementation and content of last year's program. The specific capacities to be developed through the program have been defined more precisely than the year before, based on the new target audience and lessons learned from the previous version. Certain aspects of natural infrastructure will be addressed with greater emphasis and depth. The contents will have greater emphasis on the function of the public sector and organizations; mechanisms for coordination, consensus building and decision making; and tools to support the participants' practical application projects. The program will have an initial module which trains the participants on the use of online platforms, resources, and databases.

After the approval of the work plan, the consultant prepared the flyer, brochure, registration form, and

FAQs for the course registration. The course was announced and shared with previously identified women leaders, as well as with organizations and platforms that are involved with gender related issues. The program accepted applications until July 6th. Applicants must submit ideas for practical application projects to be implemented during the course. These project ideas, which must involve water resources and gender issues, will be considered in the selection process.

Figure 16. Cover Page for the Women’s Leadership Program for Local Leaders Brochure



Next quarter, the consultant will prepare a survey on internet connectivity, availability, and other information that will facilitate the implementation of the program’s activities. The final participants will be selected and the program will begin. The course will run from July 2021 to February 2022, pending approval of the NIWS FY2022 work plan.

4.4 Administration

Staffing

This quarter, Forest Trends recruited and hired Janeth Gamarra in the role of Landscape Analyst for MRSE Projects as part of the Drinking Water Sector team. The Landscape Analyst position fills a need in the team created by the departure of Karina Santos, former portfolio coordinator, last quarter.

Additionally, Forest Trends hired Alex Zambrano as GIS Specialist with the Integrated Solutions (RCC) team. This is a new position that responds to the needs of this team as it supports the development of a portfolio of definitive studies corresponding to RCC investments.

Forest Trends also began recruitment for a new Administrative Coordinator, as our Operations Office Catherine Mendoza departed the organization for a new opportunity.

Procurement

NIWS began 16 new consultancies this quarter, which are reported in Annex 7.

MONITORING, EVALUATION AND LEARNING

In the Annexes to this report, Table 2 “Tracking Table” reports the progress on three of the Project’s indicators (it is worth noting that, for information purposes, we include indicator updates that are usually reported only once a year). Table 3 details the training events that were held during the quarter, Table 4 and 5 detail the technical and communication products that have been developed by the project; and Table 6 shows the appearance in news media related to the intervention of the project.

ANNEXES

1. NIWS Activity Description and Implementation

2. Tracking Table

3. Events

4. Technical products

5. Communicational products

6. Media reports associated with NIWS activities and outreach

7. Consultancies