

Trip Report

WEFTA Site Visits to the Urubamba Valley and Amazonas Region of Peru

December 8th to 16th, 2018

Lou Harrington

Introduction:

It had been almost 5 years since the last visit by WEFTA volunteers to the Urubamba Valley, so this was a chance to check on the status of wastewater treatment initiatives in the valley, and restate our commitment to supporting such efforts with the expertise in treatment design that several of our WEFTA volunteer engineers possess. There would also be the chance to visit two new communities soliciting support from WEFTA.

Goals of the trip included:

- Follow up on past efforts in the Urubamba Valley related to wastewater treatment system development with municipalities in the valley, and try to lay the groundwork for a follow-up visit by senior WEFTA wastewater treatment design engineers in early 2019.
- Coordinate with the Habitat Urubamba community regarding planned rehabilitation of the wastewater treatment system constructed with assistance from WEFTA in 2006/2007.
- Meet with community representatives of Cotataqui to see if there is a way our WEFTA volunteer engineers could assist in design of a reservoir and water transmission system to the community.
- Meet with Peace Corps volunteers and community representatives in Aguas Turbias and El Ron in the Amazonas Region of northern Peru to evaluate the need and viable options for latrines in Aguas Turbias and to evaluate the situation with the failed wastewater lagoon system in El Ron.

Sunday, 12/9/2018

Urubamba

After a long night and morning of travelling, finally made it to Urubamba. Met with Linda Ochoa and we went out to the Habitat community to meet with Zack Perez, current president of the local junta directiva, and a few other community members. We visited the sites of the two septic tanks and discussed plans for rehabilitating both systems. Since being constructed over ten years ago, neither tank has ever been properly maintained/emptied of solids. The work will include pumping and cleaning both tanks, rehabilitating the percolation pits (two at each site), and uncovering of the cámaras de rejas (bar screens) and desarenadores (grit separators) in front of each tank.



We also discussed planned work up and down the valley for the coming week. Zack works at the municipality and said he knows someone who is well connected in the world of economic development in Peru and may be able to assist us in our hopes of establishing a lasting presence in the valley when it comes to providing technical advice related to wastewater treatment system design.

Monday, 12/10/2018
Urubamba

Visited the school where WEFTA assisted with bathroom facilities several years ago (Santa Rosa de Lima - '712'). The bathrooms all seem to be very well kept and all functioning. The staff at the school have asked if we'd be willing and able to help with funding some shower facilities at the school, as several of the children that attend school there have actually never taken a real shower in their lives. They've identified an area behind the bathrooms that they say could accommodate perhaps four shower stalls. The photo below, to the right, shows Linda in the area behind the bathrooms where they hope to build the showers.



Met with **Ciro Villaroel** – friend of Zack who worked with NGOs in Lima, knows about international coordination and financing for infrastructure projects. Gave him my card and he'll email me to follow up.

Met with **Ing. Sergio Uscachi** – director of the water and sanitation department for Urubamba. The municipal potable water system generates 2,000 m³ (525K gallons) of water each day, but it's not enough for the population served. There are problems with the water distribution system, suspected debris in pipes. Sergio indicated that they need a thorough assessment of the water system to measure pressure, flows, etc. and identify where repairs/improvements are required. They were told that they should consider meters at each connection, but the cost is prohibitive. There are only five people that work for the water and sanitation department for all of Urubamba, and they simply run from emergency to emergency. Sergio asked if we could perhaps help with options available for testing water distribution lines, video inspection, flow measurements for Urubamba.

Met with **Paulino Ubalde** and **Walther Pacheco** – members of the board of directors of the Rumichaca JASS (made up of Paucarpata, Rumichaca, Medialuna, and Ccotohuincho). Ccotohuincho has two wastewater treatment facilities.

There are a total of 400 families/homes served, but currently only about 220 active connections. Paulino indicated that they pump their septic tanks multiple times per year, insisting that it's necessary because the solids build up that quickly, though locals have said they have not seen that happen as frequently as that. They charge their members 2 soles per month (~\$0.60) to belong to the JASS. If they don't pay, the JASS simply cuts off their water. They own a 'draga' (dredge pump) which they purchased for about 14K soles, has 31 HP diesel motor. Custom made for them by a technician in Calca. They said that it is currently inoperative, and they need to get it fixed. Paulino mentioned that the person in charge of the draga had taken the equipment up the valley to someone in Calca to pump their septic tank, and it's there that the pump broke. Email for Walther: lismaxwalther@gmail.com. We did speak of the possibility of perhaps the Rumichaca JASS renting their draga to the Habitat community once a year. Paulino said that they'd have to bring it up with the other JASS leadership, but he thought that would be feasible. It's unknown how much they would charge however. The photo below is of the draga the JASS owns.



Met with staff of Gerencia de Infraestructura – said they don't have the plans for the new proposed PTAR (WWTP), and that we should check with the Gerencia de Obras. We met with Elizabeth Itusaca Quispe, an architect that works in the Gerencia de Obras, and she said they don't have the plans for the new proposed PTAR, but she does have plans of the entire W/WW systems for Urubamba and she provided pdf copies of those.

Met briefly with Humberto Huaman, mayor of Urubamba. We set up another meeting for 9:00 a.m. the next day, 12/11. Humberto did mention that the plans for the proposed PTAR have changed, specifically the location. Instead of across the river, the new proposed site is the open terrain on the other side of the highway from the Universidad Agropecuaria, near the road that veers off the highway and heads down to the Habitat community.

Tuesday, 12/11/18

Urubamba/Calca/Huyllabamba

Met with Ing. Mauro Corimanga Enriquez, general manager of SUNASS in Calca (Superintendencia Nacional de Servicios de Saneamiento). Mauro was a fountain of information and refreshingly apolitical. He explained that the city had moved forward with development of one of the PTARs for Calca, but the other was never begun because they never were able to negotiate an acceptable price for the land where it was to be built. The upper plant, next to the terrain used as a landfill, is only partially constructed. They ran out of funding due to poor management (probably corruption too). They decided (or were convinced) to proceed with construction of the same RAFA system that John had expressed concerns about years ago and which he made clear to municipal public works leadership.

It was very disappointing to find that the Town of Calca went ahead with construction of the RAFA system, and not on the land originally designated (because the acquisition fell through) rather on the site of the landfill where John had originally suggested they consider construction of aerated lagoons. It's clear that the architect, Sr. Malpartida, hired to design the PTAR had much influence and surely the town officials felt that they had invested much in the design. It's clear that the concerns raised by John and Pete during the meeting with town officials over four years ago and the designer of the PTAR were not enough to change direction.



Interestingly, and without prompting, Mauro (pictured above at the site of the half-constructed system) who is actually a chemical engineer, very frankly suggested during our discussion that the RAFA (UASB) system as contemplated is really not apt for this altitude at nearly 9,000 feet, especially during the cold winter months, but is really meant for lower elevations. This was a similar observation made by WEFTA volunteer engineers years ago, but obviously ignored by the local decision makers.

Mauro runs the SUNASS, which is independent of the municipality in terms of finances and administration. Per Mauro, SUNASS is essentially an operational branch of the municipality. Empresa de Servicios de Saneamiento – a private enterprise. They are not employees of the municipality as is the case in Urubamba. With the resources they raise via user fees, they pay their personnel and maintain the system. However, the actual infrastructure belongs to the municipality. So any system improvements or expansions, and all major infrastructure projects are paid for and performed by the municipality.

There are 13 people that work for Mauro, three in the office and 10 field personnel. He explained that the thing he's most proud of regarding work under his tenure, is the installation of 600 meters on 600 of the 3,600 connections (17%). And with the way they've structured user fees, it turns out that the connections with meters pay significantly less each month than those that don't have meters. They calculate how much the water should cost per unit, apply that to the connections with meters according to their actual use. And they've seen a significant reduction in water usage at the metered connections, resulting in lower fees on average than unmetered connections.

Mauro's telephone: 974 792638, email: emsapa_calca@yahoo.com

The entity in charge of funding work related to water/sanitation improvements is the Ministerio de Viviendo in Lima, specifically the OTAS (Organización de Tratamiento de Servicios de Saneamiento), a branch of the Ministerio de Vivienda. They will cover the 'saldo de obra del plan maestro'. Evidently, several years ago, then-president Alejandro Toledo convinced a European financial organization (AOSD?) to provide low interest loans to municipalities such as Calca to construct their W/WW infrastructure.

Mauro says that the new mayor coming in is young and energetic, actually trained as a veterinarian. Mauro knows the person coming in as his Gerente General (City Manager) and his name is: Manuel Venero, telephone: 984 336580

Another potential contact for WEFTA in Calca could be Jose Mormontoy. This name was provided by friends of Linda and Guido. Jose unfortunately wasn't available when we visited Calca.

Linda and I stopped in Huayllabamba on our way back to Urubamba to see if the village had made any progress on rehabilitation of the wastewater lagoons. We didn't have time to stop in and meet with municipal staff, but were able to check out the lagoons across the river and it was clear that they hadn't done anything since the last WEFTA visit over 4 years ago.

Old friends at Habitat community invited Linda and me to a lunch of delicious trout, ensalada de betaragas, camotes, y choclo. Delicioso! It was a good chance to catch up with old friends.



We went back out to the site and we could hear more from Leandro Acuna (the guy helping with cleaning out septic tanks and percolation pits at Habitat) and others on the status of their efforts to rehabilitate the two septic systems. They had never done any maintenance on the system. While we were there, they had uncovered and opened the cámara de rejas and obviously it was completely blocked and all flow has been diverted to the bypass. The cámara desarenadora surely is in the same condition, completely full of grit/sand, and not performing any function.

Clearly we need to put more emphasis on training local personnel on proper operation and maintenance (O&M) of such systems as we move forward. The more complex the system, the more initial training and commitment to ongoing O&M training will be required.

We need to verify correct size for septic tank at Habitat (currently ~5,500 gallons), discuss idea of building on an addition (increase capacity with half wall to help isolate solids), or perhaps parallel tank and leach pit system.

Met with Nancy Iruri of the Oficina de Planeación Estratégico y Operativo of the Municipality of Urubamba. She is still friends with Martha Serna who we worked closely with the last time we were here and coordinating with Lucho Acuña and Raul Otazú and gave me her number (984 277197). She works in Cusco now at the USAC (Universidad Nacional Antonio Abad) and could possibly be a good contact for us in Cusco. She also may have some idea of the state of the project developed by Lucho 5 years ago, which John and Pete provided input on.

Met with Jorge Morullo, Gerente General (City Manager) de Urubamba, and he said that the PTAR project has been in arbitration for years but should be reactivated with the new alcalde coming in. He explained that Lucho Acuña, the same engineer with whom we worked years ago and got to include the concept of aerated lagoons in the plan maestro that was presented about 4 years ago. He evidently will be part of the new government coming in under the new mayor. Jorge gave me Lucho's telephone: 974 329399. Per Jorge, Lucho still lives in Cusco.

Need to follow up with Lucho or others on new site for the PTAR. Find out who we should be coordinating with in the future, assuming the new incoming municipal leadership is interested in the type of consultation offered by our WEFTA volunteers.

Checked out the biodigester at the hotel in Paucaraqui. 3,000 liter tank receives all flow. Fernacho, who is in charge of maintenance at the hotel, simply goes to the biodigester about twice a year, and with a simple manual pumping action gets the solids to move in solution to a small caja next to the digester which sends the slurry to a tank just for solids. He throws cal (lime) on the solids, there is no odor whatsoever. The liquid gets diverted to percolation pits. The biodigester that Fernacho put in at the hotel 5 or 6 years ago is made by Rotoplas and is available in Lima.

Wednesday, 12/12/18

Pisac/Cotataqui

Walked into town and walked around the large weekly market in Urubamba that brings people from all the rural communities around Urubamba. Tons of people buying and selling just about anything you can imagine ... plants, herbs, vegetables, clothing, guinea pigs, chickens, ducks, pigs, turkeys, fruit, dried meats, weavings, etc., etc. All direct from the producers of this stuff. It would be easy to spend several hours there, but had to get to Pisac.

Traveled to Pisac and met up with Isidro Curo (tel.: 993027963) who took me up to the community of Cotataqui by car (Isidro has his own taxi), high in the mountains above Pisac, at an elevation of approximately 13,000 feet. From there, we hiked up about another 1,000 feet to the proposed site of the reservoir they intend to construct and connect to the village below to help get them through the dry season (roughly June, July and August). The climb wasn't all that steep, but it was a chore to get the oxygen my lungs were calling for! The community is made up of about 60 homes with a total population of roughly 120, twenty of which are children. They currently receive water from a spring source just above the community that feeds into a small tank, and from there to piletas at each home. This water source is limited and is barely enough to provide for just domestic use to all the homes. It is hoped that, with some filtering, they could possibly use some of the water that will eventually come from the new reservoirs.



They've started constructing a series of reservoirs above the village, but hope to concentrate on expanding the one at the highest elevation. They've excavated quite a bit already, but Isidro explains that they hope to make it much, much broader and deeper than what they have now. He said that when completed, it will be roughly 5 meters deep. When asked how they propose to tap into and draw water from the reservoir, it was clear he wasn't aware of that plan. We'll need to follow up with Hernan and Steve on that. The soil is clearly very clayey, and based on the length of time between when they excavated the reservoirs and now, and the fact that each reservoir is basically full, the clay soils apparently will work well for storing the water. It's unclear what will happen during the dry season when they hope to count on this water source. There is an older reservoir below the village that they recently expanded on. Isidro explained that that reservoir has always been able to hold water year-round. So that bodes well for the reservoirs at higher elevations which seem to be constructed in essentially the same soil conditions. The plan now is to finish constructing the reservoirs and install tubing that will bring water over to another location where they'll dig another reservoir just above the village (near home with tin roof) and from there, distribute water to different sectors.

The community has about 120 permanent residents, but per Isidro and his cousin, during the community's feast in early August, family members come from all over and the population for those days swells to 300 or 400.

We went to the house of Isidro's suegra, Sra. Dionicia Yucra Melo, and she prepared a delicious plate of potatoes of many different varieties and a delicious sopa de moraya (a kind of potato soup), served with mate de muña. The room was a simple adobe structure with dirt floor and open fire in the corner. We sat as Dionicia meticulously prepared the potatoes and other vegetables and placed them in a large pot of boiling water, and Isidro and his cousin were able to share more about the history of Cotataqui and what life is like there.



On our way down, back to Pisac, we passed Nicolas Curo, the president of the community who had to attend a meeting of community leaders in Pisac that same day. We spoke briefly and agreed that we'd try to coordinate better the next time our volunteers come so he could accompany us also, though Isidro was a terrific guide and host.

In Pisac, I went to the municipal headquarters, and as is the case in other municipalities in the valley, the present leadership is on its way out. We met with Augustin Guevarra Loiza, who is a friend of Isidro (and a friend of what seemed like everyone else there at the municipal building) and has worked there for over 30 years as a driver and general support person, but also seems to be knowledgeable about just about everything having to do with Pisac. He said it's because he was 'nombrado' is why his job there is politics-proof. Augustin, together with Isidro, said they'd be happy to make introductions with the new leadership once established in Pisac after the new year.

Travelled back to Urubamba and met up with Linda one last time. She said that she was just talking to a friend of hers who happened to be the principal of the school where WEFTA built bathroom facilities years ago when that happened, Tanya Duran, and she said that her brother, Gonzalo Duran, works with a small rural community outside of Ollantaytambo that needs help with latrines, or whatever sanitation infrastructure may be needed. I asked Linda to request that Tanya contact me about that and we can start the dialog on just what's needed.

As far as any follow up trip that any of our WEFTA volunteer engineers may make, Linda asks that it not be the last week of March (3/23 to 3/30) as she'll have her hands full coordinating the activities of a large group of volunteer dentists that are coming to the valley then. She also said that she'll be out of the country the entire month of May. So anything around those dates would work for her and she'd be happy to shuttle our volunteers around.

Thursday, 12/13/18

Travel day: Urubamba-Cusco-Lima-Jaen-Bagua Grande-El Ron

I note the following travel details mostly for the sake of the next group to go that may combine a trip to Urubamba with a trip to El Ron.

Left Linda's son's hotel 7:30 am

Walk from Linda's hotel to terminal terrestre ~ 40 min.

Collectivo ride from Urubamba to Cusco (S./7 per person) ~ 1.5 hours

Had a long conversation with a guy named Ivan who is the manager of a large hotel in Urubamba and on his way to Cusco for trámites. Ivan is from Arequipa and asked if we'd be willing to assist a community he has worked with in Colca, outside of Arequipa. I shared with him what it would take and how to follow up.

Taxi from paradero in Pavitos to airport in Cusco and awaited flight to Lima

Flight from Cusco to Lima (11:30 – 1:00)

Flight from Lima to Jaen (3:00 – 4:30)

Taxi to center of Jaen (S./30 per car which can be shared by up to three people – I split it with a lady and we paid S./15 each)

Colectivo to Bagua Grande (S./10 per person) ~ 1 hour

Mototaxi to paradero for El Ron (S./2)

Colectivo to El Ron (S./5 per person) ~ 45 min, and arrived in El Ron about 7:30 pm

The El Ron area of the Amazonas Region used to be cloud forest, but since being stripped of trees about 50 years ago, the climate has changed per the locals ... less rain and warmer. Met with Peace Corps Volunteer (PCV) Lianna Kardeman from Brooklyn (Cornell Univ.) in the home of Gloria Cueva, her host family, in El Ron. Lianna shared much of her story, including how she ended up with the Peace Corps in Peru. She also shared the history of the Peace Corps in Amazonas. PC has two programs in the world dedicated to water and sanitation – here in Peru and in Panama. It's totally coincidental that we have a relationship with PCVs from both programs. Lianna found us by herself just surfing the web looking for just the kind of support that WEFTA offers. Peace Corps began in the Amazonas Region 1.5 years ago and has committed to being here a total of 9 years with three groups of PCVs committing to 3-year terms each.

Friday, 12/14/18
Aguas Turbias/El Ron

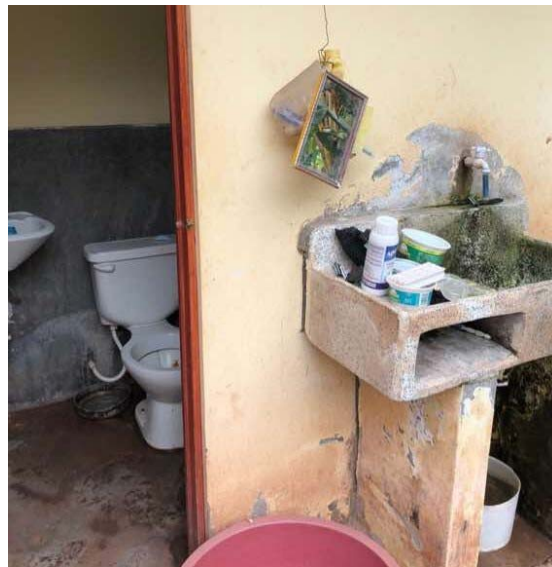
Met up with Lianna and two more PCVs in the area, Jesse Wilson from Indiana (Indiana Univ.), and Jeevan Phadke from Chicago (Marquette Univ.).



The photo above shows Lianna of El Ron, and Jesse, who works and lives in the community of Jose Olaya. PC is set up in clusters. Each PCV takes on 3 communities (caserios) per year for 3 years. Lianna's communities are El Ron, Mendingas Alto, and Aguas Turbias. Jesse explained that his main community of Jose Olaya (population: 900 to 1,000) has a large Imhoff tank which is emptied to drying beds via gravity. Jeevan asked if we'd be willing to visit his community of Chomza Alta also to assist with WW treatment. Jesse asks if any of our volunteer engineers would be willing to assist with evaluating landfill designs.



Along with the three PCVs, we visited the community of Aguas Turbias (42 homes), and with some of the locals, we then went to a neighboring community to see an example of a latrine built by PRONASAR (Programa Nacional de Saneamiento de Agua Rural) that included a washing station outside, hand washing sink inside, toilet and shower. The bathroom facility has a biodigester (though it appeared to be completely buried at the site we visited) and tank to receive liquids to filter into the subsoil (also not apparent). The following images are of the example we saw.



The water system at Aguas Turbias was constructed by FONCODES (Fondo de Cooperacion para el Desarrollo Social) about 10 years ago, but nothing was done about sanitation. The squat latrines found throughout the community are mostly in very poor condition and unclean. Some are very shallow. Some throw ash on the poop, others nothing. Access to many of the latrines is precarious at best, especially if it has rained, which it does quite a bit between the months of October through May.

One latrine (photo on following page with green toilet base) was a flush type that sent the desagüe to a pozo ciego (cesspool). Pretty much all the rest are just holes in the floor (squat type). Some are deep and others quite shallow.



We hiked up a very slick path, due to rain and mud, to check out the rompecargas and water storage tank at the top of the hill. The rompecargas was well constructed and seemed to be working properly, and the tank on top of the hill was a 10,000-liter capacity tank with chlorination system affixed to roof of tank. The operator (Hermitiano) explained that they use a chlorine powder that they dissolve and fill the dosification tank. They then have a drip system that is set per the intake flow, and turns off when there is no flow. The water system was installed in about 2009 by FONCODES and appears to be very well constructed and maintained. We did not get to the water source much further up the mountain.

There doesn't seem to be any assistance needed related to the water system, but clearly the situation with latrines is dire. It's difficult to imagine anyone making their way to some of the latrines during the night and when it has rained. The paths to the latrines in some cases were truly barely passable while they are muddy and slippery.

There are no handwashing stations near the latrines. All of the houses I went into have dirt floors and small animals (chickens, guinea pigs, goats, ducks) running freely in and out of the homes. There is an utter lack of any good hygiene habits. Hygiene education is part of the charter for these PCVs.

The locals from Aguas Turbias treated us to a nice lunch on top of the mountain and even some fresh coconut water before the hike back down. Seated on the back bench in the following photo are Jeevan, Lianna and Jesse. To the right, Lianna is offered a freshly opened coconut.



Discussed possibility that the PCVs could investigate more about the biodigesters made by Rotoplas and available in Lima. Role of WEFTA is to help the community members and PCVs figure out what configuration makes the most sense for individual latrines.

There are small towns with WW collection systems that our WEFTA engineers could help provide consultation to. The plan for tomorrow morning is to visit the WWTP (lagoon) for the town of El Ron.

Saturday, 12/15/18

El Ron in a.m./travel back to Lima in p.m.

Met with Alexander, Alcalde de El Ron, who took us (me, Lianna, Jesse and Jeevan) to the site of the lagoon which is no longer functioning. There are a series of buzones on the way down the hill to the lagoon, and the last one before reaching the lagoon is completely plugged and the wastewater stream is flowing up and out the top of the buzón (see following photo), into a ditch diverting the stream away from the path, and in fact, around the lagoon, which no longer functions due to destroyed and/or missing geomembrane liner. In the photo next to the plugged buzón is Alexander clearing vegetation actually from within the empty lagoon near the outfall weir. You can just make out the bar screen at the outfall toward the bottom of the image.



The lagoon was originally built in 2009, and per the mayor, it seemed to function well until this past summer. The dimensions per Alex are 30 meters in length, 20 meters in width, and varies from 1 meter in depth toward the upstream side and 1.5 meters in depth downstream. The system currently serves a population of approximately 3,000 people, and they anticipate substantial growth based on recent trends. Per Alex, El Ron is the centro poblado that has grown the fastest of all the centros poblados de Cajaruro. There are 525 homes served by the centro poblado (480 in El Ron and 45 from outside the village limits).

The hierarchical governmental structure is as follows:

- Caserio
- Centro poblado
- Distrito
- Provincia
- Region
- National government (Lima)

Alex explained that the geomembrane liner of the lagoon started to fail over the summer and the wastewater started to flow under the liner. The community constructed a bypass around the lagoon with provisional piping so that it could dry out, which it has done, mostly. Since the lagoon has dried, the remaining geomembrane liner material has been compromised due to theft of some of the material, and in one area it has been melted due to local farmers burning dried organic material at the site.

The infrastructure includes nothing other than the single lagoon. There is no headworks whatsoever. The outflow structure at the lower end of the lagoon has a bar screen, but there is nothing at the inlet

side. The waste stream enters the lagoon directly and the overflow from the lagoon is sent into a ditch which continues down the hill to a river below.

Jeevan asked if we had access to any literature in Spanish on how to operate and maintain a simple septic system, and other wastewater treatment systems that may be appropriate in the region. The PCVs also asked if we could provide them copies of WW system O&M and design manuals in Spanish that we may have access to.

I left El Ron with Jesse and Jeevan at about noon to Bagua Grande. From there we each went our separate ways. I took a colectivo to Jaen to catch my afternoon flight back to Lima, and from there back to the U.S. leaving about 3:00 a.m. and arriving back to Albuquerque about noon the next day.

General Concluding Thoughts:

There is a tremendous gap between what the many communities up and down the Urubamba River valley are doing with their sewage waste (sending directly to the river) and what they should be doing (treating before sending to river). But there is also a general lack of will ... or enough will anyhow ... to do anything about it. Then, as is the case with the Town of Calca, some finally do something but fall victim to a combination of ineptitude and corruption. Others still await a combination of a good viable solution for treating wastewater and the funding necessary to construct it.

One of our biggest challenges continues to be finding a way for our efforts in the valley to have legs, and not fall victim to the political cycles. At some point we'll need to establish ongoing local representation in the valley, much like we have in Honduras with Enrique Lozano and in Bolivia with Suma Jayma. Linda Ochoa is a great resource for WEFTA, but it really needs to be someone that has some kind of technical background, or at least some practical experience related to water/sanitation. I got some leads while on this trip, but nothing that jumped out as a great option. This shouldn't preclude us from sending another team down in the first half of 2019. With the change in leadership at each major municipality, this will be a very opportune time to offer our services and help steer the decision making, hopefully helping them avoid Calca's missteps.

Contact with the Peace Corps program in northern Peru was a very interesting development. Of course WEFTA/Waterlines has worked with PCVs in Panama for many, many years and we have a solid relationship with that program. The fact that Peace Corps has only two programs worldwide dedicated to water/sanitation development, in Panama and Peru, is an amazing coincidence. The PCVs I met and spent a lot of time with while in Amazonas were solid, dedicated young men and women. Witnessing firsthand the way these PCVs have been trained and how they interact with the locals was inspiring for sure. One can't help but conclude that this is the type of outreach the U.S. should do more of throughout the world. As far as connecting with the Peace Corps in Peru, this was one of those 'providence' moments that we experience in WEFTA from time to time. It was clear from this trip that there's an important role for WEFTA that aligns very well with the mission of the Peace Corps and what these young people are trying to do. The expertise of our volunteer engineers and hydrologists will be a perfect complement to the efforts of these PCVs in Amazonas, Peru.