

**A Glimpse of Development Experiences**

**A Thesis**

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## **Abstract**

A Glimpse of International Development is an ethnographic study in partnership with volunteers from Engineers Without Borders (EWB) as they conducted an assessment trip for a potable water project in Bolivia. This study seeks to understand what motivates volunteers to invest their effort in international projects, and how the experience compares to their expectations. Data for this study was collected through participant observation and interviews. Excerpts from the interviews have been grouped into themes based on their related subject matter, and then presented with a brief discussion to allow the reader to make their own interpretation of the collective experience. This research finds many similarities amongst the team's thoughts and feelings towards the development industry, the community and their project. This work is intended to benefit future generations of the EWB-UI team by retaining documentation of their chapter's first trip, and initial introduction to the community of Chivirapi.

## **Acknowledgements**

This research has been made possible by the kind hearts and dedicated minds of those who have ceaselessly encouraged me to keep going despite the obstacles. I would like to thank Rodney, Laura, and Fritz for all of their advice, support, and most of all patience. I must also show my appreciation to those who would not let money get in the way of an education. The Aripa scholarship has been a huge relief in difficult times, as well as the strong support from George and Carly, the Department of Sociology and Anthropology, and the University of Idaho. I could not have done any of this work if it were not for my brother Nate and the rest of the EWB and EIA team who have been absolutely inspirational. Furthermore, I would never have aspired to even pursue a thesis without my loving family who pushed me when it was well deserved. You can stop pushing now. Of course lastly, I must thank Bethany for everything she has done to help me along the way. Thank you. Thank you all.

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## Chapter 1: 2012

### Spring Gala

*It's funny ya know... some of the heaviest things in the world are the sweetest. I miss it. The sky would turn a greenish orange, as if someone was adjusting the dial on life. They muted the volume too. Nothing stirred, you didn't really know what was going on at first, you just knew something was different. It wasn't till you thought about it later that you realized. They're all gone. I don't know how they always knew, but without fail the ubiquitous chirps and whistles of the Oklahoma birdlife vanished. It was the most beautiful weather too. That incredible warmth and humidity wrapped around you like a spring blanket casting a torpid spell. Comfortable and heavy, the drowsiness would overtake you as the formidable beast surged across the sky. A wall cloud. Made of deep obsidian and midnight the darkness relentlessly crawled forward devouring the world. Then as a bolt of consciousness struck me I broke out of my beautiful surrender. Hey, what the hell are you doing? It was Andrew, my brother. Get downstairs! Another April in Oklahoma, another tornado.*

*They ripped up everything. They would throw a piece of hay into a telephone pole so hard it would stick right out sideways. One day you're waking up to go to school; next thing you know the haunting sirens call across the blackjack hills, like the deep bay of hellhounds. Channel 9's Gary England was telling you to get somewhere safe. Sometimes he spoke to the kids directly. He would say, "now get into that bathroom and take your mattress with you; crawl into the tub and put it on top of you." That was supposed to help for when the glass would go flying through the air in a swarm of daggers. One day you're waking up to go to school, the next day your house is gone.*

*She wraps you in that warm sleepy Spring blanket to calm you before she pulls the hammer down. Sounds like a freight train as it pulverizes you. They call her mother nature. I'm not always sure what we did wrong when she disciplined us. There's a whistling sound that goes through the chimney as the air is sucked out. Nothing is sacred in a tornado; transformers explode, 2x4's get drilled through Chevys, entire roofs lift up, and cows get thrown through the air for miles. More importantly, your photos are destroyed, your favorite chair is covered in insulation, your grandmothers painting has a bowling ball through it, and your cat is missing. More than that, people die. Children are orphaned, people are buried, husband's are lost, and daughters become ghosts. Nothing is sacred in a tornado.*

*What do tornadoes in Oklahoma have to do with clean water in the Andes? That's a good question. My mom is a real sweet southern lady you know... charming, beautiful, gracious, she can back up a horse trailer just as well as she can sing in the church choir, but more than anything, smart.*

*When I was getting all excited about this whole Bolivia thing she kind of stopped me in that sweet motherly way, "Well you know honey, I think that's really great, but something you may want to keep in mind is how you're going to do this. How are you going to pay for a project like this?" I can be pretty bull headed sometimes, and I quickly responded, "Well I'm going to get donations of course. I'll go around to businesses, or ask for support from the community, I'll do whatever I have to!" I said she's smart right? Yeah "James, you know there are people in this country that are starving, have no place to live, suffer from debilitating diseases, and need help. How are you going to convince people to give their money to help 35 families thousands of miles away; families that they have never met and will probably never meet. Why should they help you in Bolivia, when we need help on main street?" I didn't like that. I didn't want to hear that. She had a real point you know. And I didn't want to hear that cause I felt like it mattered, I felt like those 35 families were important, but I didn't know what to say. I still think those families are important, and I've been doing a lot of thinking about that question.*

*Remember how I said some of the heaviest things in the world are the sweetest? I don't miss tornadoes because they twist rail iron into a pretzel. I miss tornadoes because they make you see how good people can be.*

*We might be runnin' through the sumachs and green briars when Ben would stop. He'd perk up like a scout, inspect the weather, listen for the birds, and turn around to give us the orders. My oldest brother was king when we were playing in the woods. When he said the weather was getting bad and we needed to go to the house; we went to the house. Then the phone would ring. My mom and dad would call to make sure we had the news on and were paying attention. We would be told to stay home or go to the neighbors. Sometimes we weren't home. Didn't matter where you were though. Someone would always take you in. Friends would call to make sure we had somewhere safe to stay. Sometimes we'd have 15 people in our basement, just laughing and telling stories; waiting for it to clear. People would become instant friends in grocery stores. Strangers would hold each other huddled beneath the underpasses when they were caught on I-40. And when it was all said and done entire communities would organize. Masses of people would go around picking up the trash, pushing over rubble, rebuilding fences, cutting down trees, and sweeping up the glass. It didn't matter who you were. It didn't matter if they knew you, if you were a good person, if you were smart, if you were Christian, Mexican, White, Black; nobody cared about any of that. People just wanted to help.*

*People wanted to help in Oklahoma for the same reason that I want to help in Bolivia. It's got nothing to do with moral imperatives, colonial guilt, or American privilege. People want to help each other because we're stronger as a community. It doesn't do me any good to have a beautiful home when my neighborhood is leveled to the foundations. We work best in cohesion, as a species we care*



*for each other because we care for ourselves. It's in our best interest to be interested in our community. I don't think too many people would argue that.*

*The disconnect lies in semantics, just like everything. That's why politicians are slippery, lawyers are slick, and dictionaries were invented. See it comes down to what you consider a community. When the tornadoes would come my brothers were my first community, then my parents would call, then my neighbors would lend a hand, then my friends would offer their shelter, if that didn't do it the high school gym was open to the public who needed it. It worked in that same order for cleaning up the wreckage too. Beyond the township was the county, then the state, then nation. Community crossed through family, kinship, friendship, local, regional, and political borders. All of these are just different systems we have created culturally as human beings to provide support when we need it.*

*I don't know most Oklahomans any better than I know the people in Bolivia. But I was a part of the Oklahoman community. You know what, we're part of a global community too. I'm going to meet those people in Bolivia, and I'm going to ask them what they would like to say to you. I'm going to come back, I'm going to knock on doors, invite people to another event, and tell you about the village of Chivirapi. I'm going to show you pictures, and tell you names. I'm going to share their stories with you. And I'm going to tell you what they said when I asked if they would like me to bring a message back*

*“Why should they help you in Bolivia, when we need help on main street?” I have two reasons.*

*First of all, no matter the scale, from familial to global there is nothing more important to human survival than community. When your family can't help you, reach out to your friends, when your friends can't help you go to your coworkers, your congregation, when they can't help ask the town, if that doesn't work keep going bigger and don't stop till you've asked everyone in the entire world. Well, 35 families in our global community have asked us for help. With everything I've received in my life I believe I would do myself a disservice by looking the other way.*

*But perhaps most importantly, if you still can't find camaraderie in the human community beyond political boundaries, consider this. Moscow is our community. I adore this place, from the old houses I jog by, the restaurants I eat at, the friends I say hello to on my way to get coffee, the parks I daydream in, the place I first kissed my girlfriend, the pond in the arboretum where I read Walden. This is my community, and I am proud to live here. Furthermore, I'm proud to go to the University of Idaho. This town is layered in rich beauties and integrity for the same reason as the campus. Because Moscow is a place where people dream big dreams, and stick together. The students who have*

*organized this event are dreamers. We have worked ourselves to exhaustion despite jobs, deadlines, bills, wives, husbands, and classes because we believe in Chivirapi. We believe in those 35 families, and believe we can make a meaningful change in the world.*

*Maybe we could have gotten more people to attend this gala, maybe we could have started with a smaller project, and maybe building a water treatment facility for people who suffer thousands of miles away is a lofty goal. But isn't that what being a student is truly about? This is our time to branch out, strive to find our course, and with help potentially impact the world. We are constantly and voraciously learning with every single risk we take and dream we chase. As members of your community, and a generation of the world's next leaders, laborers, and lovers I beg of you, stand in solidarity with us - as our community believe in us.*

*Thank you very much for coming, and thank you for your support.*

### **Introduction**

I wrote this speech for the University of Idaho's chapter of Engineers Without Borders' Spring Gala in an attempt to rouse community and donor support for our efforts to conduct humanitarian work in Bolivia. Subconsciously this doubled as an opportunity for me to validate my own personal commitment to the mission. This speech accurately represents my perspective on development efforts prior to the trip. It also provides a fitting introduction to the nature of this research and the team involved. Gardener and Lewis in *Anthropology, Development and the Post-modern Challenge* remind us of the necessity, when writing of 'the other', to write in an accessible way for both the people who are the subject of anthropological writing and interested public. As an exemplar of this, they provide Geertz's work in Indonesia in which he explored development from a contextual, historical perspective in a "form [that] was accessible to non-anthropologists." It is in this manner that I choose to write the story of the developers who travelled to Chivirapi in pursuit of clean water.

The primary objective of this thesis is to produce a detailed account of an international development project from the developer's perspective. This perspective is demonstrated through the documentation of collective experiences, reflections, and knowledge that a team from the University of Idaho's chapter of Engineers Without Borders (EWB) built over the course of one year preparing for, and conducting an assessment trip in a rural Bolivian community. The intention is that this document will inform future EWB generations of the personal, cultural, and practical knowledge gained as a group. It is further hoped that the community of Chivirapi will benefit from this document indirectly by aiding EWB-UI to retain the collective knowledge of their veterans. A secondary goal of

this work is to provide an example of the value that ethnographic involvement can add to development projects through documentation, community surveys, team interviews, and participant observation. The following work is split into two primary categories: Part I summarizes the trip and data gathered, and Part II analyzes interviews taken with team members from the trip to better understand the developer's perspective.

## Chapter 2: Background

### The Team

The following account describes the team involved in the Chivirapi assessment trip and the motivation that influenced this work. This summary is taken from post-trip journals and has been modified to accommodate this story. Beyond providing context for the interviews that will be analyzed in following sections, this accurately provides my sentiments as a student, developer, and anthropologist.

After returning to Moscow for nearly three weeks I wrote in my journal the following: “It was a wonderful, humbling, and even depressing feeling. The stark contrast between the scenic Palouse and a small rural Altiplano village in Bolivia has left me in serious contemplation of the daunting and nebulous concept that looms over so much of the world – international development. What is it? What are the implications?” I think it is incredibly likely that I will spend the majority of my life on these questions, and through the course of this document I aim to explore how others felt in the same situation. But as for now, perhaps a brief introduction to the project will illuminate some of the mysteries shrouding the industry so bent on improving the quality of lives through progress.

My experience in Bolivia was made possible by an organization known as Engineers Without Borders. The organization was founded by Bernard Amadei, who wanted to help a community in need by facilitating technical expertise for some rudimentary engineering projects. EWB has since grown to a worldwide network of university students and professionals teamed up for the same altruistic goal of providing assistance with basic human needs by facilitating technical expertise for basic engineering solutions. It is not stated explicitly, but this work is generally done in developing regions of the world.

In *Developing environmental awareness in engineers through Engineers Without Borders and sustainable design projects*, Johnston, Caswell and Armitage address the disconnect between the traditional engineering curriculum and practical understanding of environmental issues. They say the curriculum “is weak in opportunities for students to experience the link between the practice of engineering and the ideals of environmental sustainability.” They use Engineers Without Borders as an example, and as a suggestion, as to how this can be addressed – “viewing [environmental and engineering issues] through the eyes of the affected inhabitants.” By exposing undergraduate engineering students to real world projects presented by Engineers Without Borders in the first year of their program, they say, the importance of considering the social and environmental issues can be

more firmly ingrained in the problem solving process of engineering programs<sup>1</sup>.

The University of Idaho chapter of EWB had been established for little more than a year. With that came a healthy mixture of blessings and curses. There are few templates, no veterans, and plenty of first-time mistakes to help build experience. And up until this past trip, all of our guidance and information was gathered from secondhand accounts at conferences, online, through the larger EWB-USA, and classroom experience. Of course, there is an upside to a situation like this. All of the paperwork, plans, and postulations were made with honest determination and goodwill. I could imagine when development becomes a career it could become easy to walk through perfunctory steps in a freshly hollowed shell of good faith. This all felt captivating, ethical, and hopeful.

Our burgeoning new chapter selected the community of Chivirapi as our project from an available list put forth by EWB-USA. It is essentially like an adoption agency for projects. The parent organization, EWB-USA, acquires potential project sites and puts them up for selection by suitable chapters. Once the background check is run and everything is copacetic, the chapter makes a five year commitment and gets to work. Generally what happens, since the project lives so far away, is an intermediary is introduced. In our case it is Engineers in Action (EIA). This is a Bolivian based NGO that works with EWB and Rotary Club to improve the quality of life for rural Bolivian villages by means of basic engineering feats. They have been integral to our project in three primary ways. First, EIA scouted a particularly poor area of the Altiplano that they had already engaged with other projects for potential needs. Their obligation is to find communities that are not only in need, but willing to collaborate, as well as having a local municipal government that agrees to invest in the project. Once certain criteria are met to establish a relationship for development the project is put up for adoption. Second, they facilitate all of our needs with supplies, translators, guiding proper steps to work with the government, meeting with the village, and essentially preparing the community for our arrival, and helping us during our stay. Third, the organization acts as our contact to the community while we are thousands of miles away. They can help the EWB team by meeting with leaders, purchasing supplies, checking prices, and essentially anything that would be easier to have an in-country contact facilitate.

As a new team we were not able to easily predict what we would find in Bolivia, how smoothly things would go, or what the future would hold. Of course, the experience was met with unexpected limitations, pockets of success, and a landscape of realism dotted with chutes of hope. I want to take a moment to briefly summarize the expectations and preparation that went into the trip,

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<sup>1</sup> C.R. Johnston, D.J. Caswell & G.M. Armitage, "Developing environmental awareness in engineers through Engineers Without Borders and sustainable design projects." *International Journal of Environmental Studies* 64:4 (2007) 501-506

what actually happened, and what potential courses are left for the future.

With a new shining project in hand we began by electing different project leads. We needed a mentor for the project with professional experience. Luckily with our group mentor's background in hydrology, he was able to double for us. A project lead was elected to manage the entire affair. There were two health and safety officers to ensure our readiness for hazardous situations. Lastly there was an education, documentation, and cultural lead – yours truly. Together we were supposed to prepare for an assessment trip to Chivirapi where we would take a first-hand study of the situation. The foremost priority was to confirm that the community was honestly invested in collaborating with us on a feasible project. Subsequently if that criteria was satisfied, data would be collected for the following design process leading up to an implementation trip.

Of course, an assessment trip turned out to be absolutely necessary. With the limited amount of information we had in Idaho, all we could do at the time was make assumptions about the community. Our understanding was simplistic. We knew there was a community of people in an impoverished part of South America who lived with absolutely no potable water and would like our help. We knew that they were Quechua, which provided nothing more than general cultural insight to their potential lifestyles. However, it is important to note that one cannot know Moscow by knowing it is a dominantly Caucasian university town in the Northwest United States, just as we could not know Chivirapi by knowing it was a Quechua agricultural subsistence community in the Cochabamba Altiplano of Bolivia. Regardless, we were informed that they had already established a 'water board' to collect taxes and ensure proper maintenance. If true, this was probably a remnant of work formerly expended in the pursuit of potable water by the organization World Vision. There was a slew of anecdotal information that offered some insight but little substantial data: they lived along a river that floods in the wet season and offers nothing in the dry season, they had an agricultural subsistence, when money was needed the men picked up work in the cities as masons, they had some electricity, a failed water system set up years ago, and they knew we were coming and wanted our help. Based on the information we were given, certain assumptions were made as well. There was most likely a high rate of child mortality probably attributed to diarrhea, we needed to build some sort of basic water system, ensure that the water board was set up to maintain it, give them our contact information and check back every year or so. Certainly I am simplifying things a bit. We knew there would most likely be things we were not expecting and we would have to adapt. But if all went smoothly, then it would be just that simple – assess, design, implement.

## Chivirapi

The trip began with a six hour drive out of La Paz in a land cruiser strapped with a big blue tarp full of our gear on the top rack. We wound up and down the grassy mountains of the Altiplano as we bent our necks in all directions to grasp glimpses of llamas and alpacas. It did not matter that we had seen them all of our lives. For some reason when you see llamas on the scrubby yellow slopes of the Andes, they turn from boring fuzzy blank staring sheep/camels, to riveting exotic fuzzy blank staring sheep/camels. We pulled up to 12,000 feet as we beat down the dirt road leading into Bolivar - the local municipality overlooking sixty communities. After some negotiations in town we careened past the burning trash piles that fed into the massive dry river bed. Chivirapi is only a mile or so downstream from Bolivar which has roads, electricity, stores, a school, church, hospital, and potable water from a tap, yet it is a much different settlement altogether. During the rainy season around December through February, the people are completely cut off from the municipality for days at a time. The road literally wallows directly through the river bed, yet the people there do not own vehicles or motorcycles, so it is not a matter of getting out so much as getting in. Yet there are no stores with supply shops to be stocked, no crops to be imported or exported, no garbage trucks, oil tankers; nothing. The village is highly self-sustaining. As mentioned previously, whenever the people do need to purchase things, the men do temporary work in the cities. Sometimes they may just go overnight, as we witnessed a father do because he believed the more expensive medicine that tasted better would help his daughter (even though we read the ingredients to be the exact same despite a little sugar and dosage), or sometimes men leave for months at a time.

The community consists of a sprawl of 24 mud households reaching along both sides of the river bank. Llamas, cows, and sheep are herded out from their tethers at the home to pastures down the river and up the slopes. The sides of this wide mountain cradle are lined with rocks designating different family plots for wheat, potatoes, and beans. The skeletons of development linger throughout the pueblo like ghosts of broken promises. The gift of the handout has done nothing to teach partnership - only to imbed some sort of cultural conflict in the roles of dominance and materialism, and the donor/recipient relationship<sup>2</sup>.

Near the community house where we stayed was a solar panel linked to some sort of pump,

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<sup>2</sup> In a 1972 report for the OECD, *Aid Management in Developing Countries*, Margaret Wolfson gives case studies of three different aid projects in Tunisia. She examines them for the purpose of identifying the root of common management problems, and explores avenues to improve the efficiency of their efforts in order to better meet their goals of assisting communities they struggled to 'reach'. In doing this, she provided a diachronic glimpse of the authoritative perspective of development, one that exemplifies the donor position in a hierarchical relationship. The EWB team encountered, and noticed, significant ramifications of this historical (and continuing, unfortunately) perception.

which no longer fed the dry white reservoirs on the hillside, with proudly engraved plaques “sistema de agua potable,” a product of a partnership from World Vision and the P.D.A. (a local government initiative for area development). Stretching from the solar panel to a higher point in the river far upstream was the buried corpse of an irrigation system whose lungs now choked on dry earth. The settling basin was caked in layers of dirt. Reaching out into the wide bed lay an exposed pipe that had cracked under the force of life that reinvigorates the sleeping Andes in the wet season. Finally, all the way in the middle of the river, designed to take the brunt of the river's wrath with a widely exposed concrete wall, was the infiltration gallery that split under the monumental force. More depressing than the poor forethought that backed each of these projects were the shattered expectations strewn about the riverbed; time and money invested, hope implanted, labor borrowed, and eventually, after less than a half year of water that facilitated only one side of the community, the inevitable mechanical drought. The infiltration gallery was cracked, the connection to the settling tank snapped, the irrigation line clogged, solar pump broken, and tanks empty. Depressing – truly.

Despite the failure of past efforts, any patina left on the souls of the villagers was suppressed by the new buzz of energy surrounding the latest endeavor. As a complete surprise to us, a potable water system was already being constructed by the municipality when we arrived. It was a weird feeling. I should have been ecstatic. Wasn't this a good thing? Isn't this what we wanted? Yet, I felt reserved, unsure, almost betrayed – could I have been upset that I may be irrelevant? After all, why did we raise money and go to all of this effort if we weren't needed? Regardless, the community was excited. They fervently dug in lines, all working together for the new pipe that would soon be laid, and in the meantime we gathered our senses. Our commitment was not to a water system anyways. It was to help a community. If they still needed and wanted help and would dedicate to work with us in a partnership, then we were still needed.

Let's begin with a quick synopsis of the trip; then we can discuss a critical evaluation of all those messy little feelings, expectations, and thoughts. We began the process with a community meeting. Standing in a circle our team comprised half, with male elders, heads of household, and their sons representing the other half. The dirigente (leader) was present, as well as his second in command who arrived later, and the secretary<sup>3</sup>. Members of the water board were present as well. We discussed

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<sup>3</sup> The local authorities mentioned here would be what Christiaan Grootaert and Deepa Narayan-Parker consider ‘informal authorities’, ‘formal authority’ being the officials and mayor of Bolivar. In *Local Institutions, Poverty and Household Welfare in Bolivia*, they advocate for a combination of consultation with informal authority and formal, beginning at the ‘most informal’ level. They say this has tended to be overlooked within recent trends of Decentralization within development. The team experienced this need to go through the local avenues in order to achieve anything, yet also were exposed to the necessity of going through formal channels. One cannot exist without the other in Bolivia.



why we were in Chivirapi, what their expectations were as well as ours, identified major problems, willingness for collaboration, what the purpose of our current trip was, and permission to do both engineering and social surveying in the community. We were well received with gratitude for coming. They validated our assumptions that water was indeed their primary concern, and granted us permission to carry out our work.

Following the meeting, we split into different teams to start surveying. I led a social team with two other team members who were going to watch me conduct a few interviews before branching out on their own, a translator from La Paz, and two young men from the community who would help translate from Spanish to Quechua when needed. The other members, which for simplicity in designation I will call the engineering team, split off with some community members from the water board and our EIA contact who doubled as a translator. Throughout our time there the social team canvassed the entire village, conducting a series of semi-structured interviews covering demographic, water quality, sanitation, and community health questions. Twelve representatives of the twenty four households were available for interview. We also discussed irrigation issues and acquired a community-drawn map of the entire area. Some members were absent due to work in the city or out in the fields. Meanwhile, the engineering team surveyed critical points of the topography, assessed the existing and potential water sources, reviewed the abandoned infrastructure, and took samples for biological and metallic testing.

On the second to last day, the social team interviewed the local doctor at Bolivar's small hospital in hopes of gaining a bit of comparative information to contrast with the informants in Chivirapi. Meanwhile, the engineering team reviewed the potable water system that was currently under construction. Once we all arrived back together in Bolivar we met with the mayor of the municipality to discuss our intentions in the area and open a dialogue to negotiate their financial commitment to the project. Although I was not overtly impressed with the body language displayed, the meeting was successful by all verbal measures. Finally, we ended our assessment trip with another meeting where we recapitulated our interests and concerns to the community, explained the work we did, as well as outlined our intentions for the future. We also spent time demonstrating the results of our bacterial samplings – explaining the difference between the cultures, where they came from, what they do to humans, and how ingesting them can be prevented. The community asked questions about the water, and what processes could be taken to prevent bacteria from growing in the wells. With a reiteration of our commitment to come back and keep working with them as well contacting them during our absence, we adjourned our meeting and prepared to return to the States.

And now here we are, back to the present, feeling hauntingly as if the project was a case study

in Crewe and Harrison's '*Whose Development?*<sup>4</sup>'. At this point we see an absolute necessity in reviewing a new direction from the simplistic and perhaps naïve assessment, design, implementation - easy as 1,2,3, model. The information has been gathered; now it must be sorted. There will be a decision matrix to help efficiently find a solution that works for Chivirapi. We are also discussing the idea of creating multiple designs with a detailed list of pros and cons so the community is empowered to pick their own option or even modify an option how they see fit. Beyond that, as a team we are going to have to critically evaluate what we have learned about the nature of this work and what implications it has for the future.

Upon reflection I have decided to begin evaluating the project by examining what expectations were confirmed in the assessment, and which have deviated. We were initially struck by the warm welcome and willingness to collaborate. Despite the need to be working, people constantly took time out of their day when we needed them. They sat for hours of interview questions with hospitable patience, and guided us along the landscape to examine the topography. We also realized that despite the water system currently under construction, it is entirely likely that we should be prepared to repair or build a new system. The engineers had little faith in the current design and believe it will not hold up to another wet season. The information we received regarding Quechua subsistence practices in the Altiplano, partial urban employment, and patriarchal consensus-forming social organization all held up to be accurate. The estimated community size and population also turned out to be accurate. However, it was a bit farther spread than we necessarily expected, and is proportionally split on both sides of the river which adds to the engineering complications. The rumors of a spring turned out to be true, as I watched with my own eyes the water churning stones with its great head bubbling out of the earth. The river was wide, fluctuating, and dirty. The wells, however, were a bit of a curiosity. We were not fully aware that so many households had their own personal wells, not to mention, with fairly clean drinking water<sup>5</sup>. The situation regarding sanitation was about what we expected. Soap is rarely used, and contaminated water is used for generally all purposes at different points of the year. Furthermore, a unanimous answer was offered for the lack of

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<sup>4</sup> In '*Whose Development? An Ethnography of Aid*', Emma Crewe and Elizabeth Harrison call attention to the idiosyncratic functions individuals and organizational structures carry within each specific development project, exploring the issues that lead to misunderstandings and 'failures' in each. Cases included a fish farming project in rural Zambia, a ceramic stove project in Sri Lanka and various women's empowerment organizations worldwide.

<sup>5</sup> In Crewe and Harrison's *Whose Development: An Ethnography of Aid*, the authors present a case study about the attempted implementation of 'modern' stoves in many places worldwide. However, due to different social and environmental influences, the plan failed and needed to be re-thought and readapted to be compatible with local environments. In these cases, western assumptions were made before going to the places to receive the stoves. The situation with the drinking water in Chivirapi reminded me of such cases in this book; a reminder of the importance of not making project plans on expectations but rather finding out the reality of the lives of people there first.

soap – money.

Many of our key expectations deviated from an idealistic anticipated discovery, to shades of truth mixed with complications. For instance, we knew there was pre-existing infrastructure that had been abandoned in the area. However, we thought it was constructed by UNICEF, lasted for three years, and was left derelict once it stopped functioning. Our information also indicated that the UNICEF project was a pump that fed to a large tank, which eventually locked up with sediment. The reality turned out to be a series of development projects in the community in a partnership between World Vision and the local municipality, not UNICEF. They installed two tanks, a solar pump, and an irrigation system. All worked at one point, but failed in less than a year, and no one returned to check on the project. Furthermore, we learned that our focus will still be potable water, but it is more complicated now due to the system being built that is likely to fail. This creates a situation where we do not want to overstep our bounds or insult anyone, yet we must be prepared for the inevitable repairs or reconstruction to ensue.

In the meeting assembled on our first morning in the community, we asked what they saw as their primary concerns. Surprisingly, irrigation was elevated to nearly the same importance as potable water. I think the importance of this point was not fully realized until later. Through interviews we learned precisely how important their crops and subsistence are to them. More than just a means of life, it is a way of life. I was very curious why these people stayed in Chivirapi. Bolivar was not far away; neither were other communities with clean water. I believe the answer is cultural. Plots are divided into smaller and smaller parcels based on the old Spanish system of dividing land into sections for each son. Passed down from generation to generation, the land is a part of their heritage. To pull from Boas' historical particularism, this land is a symbol of freedom descended from the momentous Land Reform of 1952 that was birthed out of the revolution. There is identity within the soil. This importance was teased out from interviews, observation, conversation, and historical context. Ultimately we have learned that whatever approaches are suggested must include agriculture as a priority.

Some assumptions turned out to have less validity than expected. With the concept of a community lacking potable water in a developing country, it was easy to infer that child mortality and diarrhea would be a primary concern. Although our surveys did indicate that this could potentially be a problem, it certainly was not voiced as an explicit danger or cause for worry within the community. Our interview with the doctor, backed with our observations at the homes, actually noted that nutrition is the primary health problem. Furthermore, the assumption that people boiled their water to purify it was completely erroneous. They had been told this information before, but it did not take into mind

the subsistence context of the villagers. Boiling requires extra resources to make a fire in an environment where fuel is sparse, work to collect the water and make the fire, and time to bring the water to a boil. They reported that it wasted their entire morning, thus making any benefits null as time is not a luxury their lifestyle affords.

Associated with a lacking consideration for the community's time are education initiatives employed by NGOs in the past. The doctor explained that the NGOs in the past did try to educate and train villagers. However, they did not respond well. The people wanted to be paid to learn<sup>6</sup>. If considered in the right light, I believe this is an extremely logical response. By taking time away from their fields and animals to learn from an outside authority, they are essentially having to work harder because of a vague notion that it is good for them. As exemplified by the demonstration of bacteria cultured from the very water they drink, there does seem to be a great need for some forms of education. However, just as is universally true for any classroom, the curriculum must be customized to the audience. Whether that includes some form of compensation for time or personalized science experiments, the people's worldview and value systems must be incorporated.

Finally, probably one of the most difficult preconceptions to reconcile was the lack of money available for investment from the community. The water board that we believed to exist was intact. Also, through interviews we found that our assumption that people would be willing to contribute financially to the maintenance of a water system was also correct. However, we overlooked the amounts they would be willing to contribute. Approximately a third of our sample population could not or would not contribute. The remainder were willing to contribute fifty centavos per household per month. That equates to a little less than seven cents. Even if the water board could collect monthly contributions from every household, the annual maintenance budget would be twenty dollars. Thus, whatever engineering possibilities are designed must take the financial constraints into consideration. As mentioned in the sentiments of some of the team, “we can engineer a system to pump clean water to every home and irrigate every row of crops. That's not the problem.” No, the financial constraints will greatly influence every decision made.

With all of this being said, I think it is fair if I share some of my own personal reflections on

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<sup>6</sup> This situation was also echoed in In Crewe and Harrison's *Whose Development: An Ethnography of Aid*, particularly in their discussion of technology and scientific knowledge. “The division between indigenous and Western or scientific knowledge is...based on ideas about people rather than on objective differences in knowledge or expertise,” they note on page 92. Perhaps there were differences in ‘knowledge’, but whose knowledge? The people of Chivirapi had lived their lifestyle for a long time and developed a shared, people-focused knowledge by necessity, trial and error. Their knowledge base, although different is not necessary wrong in any culturally relative sense. Rather, by being a different type of learning, it seems that it can be challenging for outside educators to gain the expected amount of respect for their education initiatives.

the future of this project. These views do not reflect EWB, EIA, my peers, or anyone else but myself. I tend to consider this project as a large puzzle. There are unknown variables, truths measured in degrees of assumptions, pragmatic solutions, and quantifiable data, smothered in qualitative considerations. Furthermore, overarching everything are the ethical considerations regarding investment versus outcome, manipulation, exploitation, and ethnocentrism. Yet beyond the difficult moral wrestling match that constantly churns and wrenches the thoughts in my anthropological aspirations, is the direction I am beginning to see unfold before me. There are many cultural stipulations and patterns emerging as warning signs. Purely in my opinion I think there are three main issues that should dictate the future of our work in Chivirapi. 1. Values – I believe that the land, crops, and animals represent far more than simple means of survival. They are a source of pride, heritage, and life. There is a blatant reason why irrigation was listed as nearly equal to potable water, followed shortly by water for the herds. Education is included under this category. Any attempt to educate should be done under the umbrella of their relative world, and should be reciprocal rather than authoritative. I mused with our mentor over the concept of a partnered education/work initiative. We discussed the possibility of villagers participating in small education sessions, and in return we would work alongside them in the fields to compensate lost time. A system that does not honor their same values is destined to fail. 2. Money – It is surely not fair to impose a financial burden upon these people, even if it is in the name of their own good. A disappointing reality may be that the best option is to do what is most realistic. Fortifying wells and making sure they are covered very well may prove to be more effective than building a water distribution system that will last only half of a year before it joins the development cemetery. 3. Mentality – It is not my place to label their mentality. Yet, I can say that a benefactor relationship is not equal and can cause serious repercussions. Logically we can argue that in material wealth or Western education we are not equal. Yet that dissolves the very notions of true humanitarianism, which in my opinion, is the only true reason we should be there. If we cannot build a relationship of empathetic and reciprocal understanding, then surely we are wasting our donors' money, and everyone's time. Thus, in conclusion, I believe with a solid focus on a reciprocal, financially aware, educational approach that focuses on their subsistence values, we can truly build a successful project in Chivirapi measured in relative values of improvement rather than Western notions.

## Chapter 3: Community Survey

### Schedule

The following timeline provides an overview of the daily activities and major milestones that took place during the course of the trip.

#### August 10th

- Team Arrives
- Packing
- Drive to Oruro
- Drive to Chivirapi
- Unpack
- Setup bedding and lighting

#### August 11th

- Meeting with the community
- Heading out to survey households, heading out to survey the topography
- Come back for lunch
- Go back out on the same side for the day – social surveying
- Come back to a soccer game
- Eat dinner

#### August 12th

- Headed out in two teams for interviewing – Luigi and Afnan translating
- Engineering team went out for more surveying
- Came back for lunch
- Quick break to sample the covered well
- Went back out across the river
- Came back – went to Bolivar for supplies
- Dinner

#### August 13th

- More engineering surveying in the morning
- Engineers go to check out spring at the base of the hill with water system
- Social team take Eloy's wife, daughter, and neighboring boy to hospital
- Interview doctor
- Reunite with team, meet with mayor
- Lunch – Celia exhibits her textiles
- Went out to find Eloy to talk about land distribution
- Eloy was working – interviewed Luigi
- Engineering team headed out for more surveying
- Kylie was sick, Hailey typed notes, Luigi and I went to look at the river
- Came back and went to the spring and irrigation system with Brian
- That night Eloy came by – asked about land distribution for crops – made a map for us
- Showed Eloy the bacteria samples we took from the well
- Dinner

#### August 14<sup>th</sup>

- Meeting with community members to discuss our work, goals, partnership, and bacteria samples
- Lunch

- Packed
- Headed back home

#### August 15<sup>th</sup>

- Took samples to lab
- Went back to EIA
- Ran errands
- Left for airport

### **Surveys**

The following excerpts provide a synopsis of the data taken from community surveys and observations. This section is predominately taken from writing that contributed to a post-assessment report for EWB.

#### Interview with municipal doctor

In an interview with the resident doctor in Bolivar we discussed three primary topics regarding Chivirapi – water, education, and irrigation. He agreed that water was certainly the primary need in the community. However, there happened to be some issues from his perspective that muddle the situation. Previously NGOs have worked with the community to establish adequate water sources for both drinking as well as irrigation. Yet, due to an apparent lack of education regarding sanitation and maintenance, the systems have failed. Part of this information deficit in his opinion is an appropriate understanding of proper human and animal waste procedures. Furthermore, the community refuses to support the information provided to them by the hospital regarding sanitation practices. Beyond the mistrust of the hospital, the community wants to be paid for time spent being educated from NGOs and the hospital. Lastly, coupled with the mistrust and misunderstanding of Western sanitation standards, the community is said to not support the person who has been trained to maintain and repair the water system.

The doctor believes that the community cannot afford the time and energy required for education. A lack of literacy, poor Spanish comprehension, and cumbersome labor demands make education a luxury that the people of Chivirapi do not actively seek out. Yet the older generation sees a value in formal education despite the hospital's lack of success with sanitation initiatives. Most children are sent to school. Upon graduation, however, as a rite of passage the young men join the military. The doctor adds that afterwards, they labor in the cities where they learn to drink, smoke, and have sex. They forget what they learned in school, and upon arrival home they marry and repeat a

similar cycle with their children. The doctor notes that high birthrates in the community are a serious issue contributing to their woes. NGOs have tried to introduce the concept of prevention in the past, but it was not accepted. Additionally, when the people of Chivirapi are taught something, it generally lasts only a month or so. He firmly believes that education is the root of their problems. It was understood from our conversation that he referred to standards of Western education.

When asked whether he believed irrigation was necessary, the doctor affirmed that he believed it would be a good idea but would be problematic if not provided for everyone in the community (this is an issue that occurred when NGOs first brought potable water to the community – only servicing the smaller population on one side of the river). Related to irrigation, however, is the issue of nutrition. Apparently NGOs in the past have tried to work with the community through greenhouse efforts to improve the variety of crops in children's diets, but it was met with failing results. The older members of the community seemed to become jealous that the children were able to eat nicer food. Also, a lack of understanding about pest control led to unsuccessful yields. The doctor emphatically noted that they need vegetables in their diet, which is currently heavy in potatoes and beans.

While there were parallels in the doctor's information with some of the community's sentiments, he contrasted many of their opinions. When asked to explicitly state a ranked list of necessities for Chivirapi to prosper, we were provided intriguing answers. He regarded the most important need of the community as education. This was to be expected with the blatant difference in ideas and behavior regarding water and sanitation. Though a bit surprisingly, this was followed by a nutrition system. The children apparently suffer greatly from malnutrition due to the high starch/low variety diet. Contradicting his earlier statements, it was not until the end of the list as a third priority that the doctor noted the need for secure water.

This interview provided insight to Chivirapi that slightly offset the bulk of community responses. However, as a neutral third party it is imperative that EWB balances between the explicitly stated needs and concerns of the community with the outside perspective bestowed on them by the doctor.

#### Interview with heads of households

Our social team consisted of three students, myself and two engineering students. The group canvassed the community with three translators, one Spanish, whom we brought from La Paz, and two Quechua community members who volunteered their assistance. Our goal was to interview



representatives from 50% of the households. While largely complimentary to the doctor's responses, the community seemed to view certain aspects of their situation in a different light. The insight they provided allows us to gain a closer view into their world and specific needs. We learned that water is most certainly their primary concern. Potable water was the most desired commodity, followed shortly by irrigation, and then reserves for their livestock. In support of the doctor's response to irrigation, we discovered that providing water to a fraction of the community would be met with dissatisfaction. Contrary to the doctor's view of education and labor cycles, the people of Chivirapi seem to hold education in an incredibly esteemed light. All children attend school in hopes of a better future except for the eldest in families who need the extra labor. Furthermore, the community members are astute, skilled in multiple trades, and diligent workers. This provides a bit of a complication when trying to understand previous exchanges of information between the community and outside influences. For we know that they value education and they desire help with certain health and engineering issues, yet previous efforts to work with hygiene and water have failed. The issue of what information will be valued and what will be discounted undoubtedly involves layers of cultural complexity. Also, it is possible that without speaking to the previous NGOs who initiated education programs, the information was potentially conveyed in an unsuitable manner. Thus, whatever steps EWB takes towards partnered community improvement will have to be complimented by a very thoughtful and integrated education design that works in parallel to the community's values; not in opposition. The following sections summarize the results from each of the main interview sections in order to provide a more accessible analysis of the social results gathered in Chivirapi.

### Demographic Information

The average age of our informants was approximately 38 years old. Our interviews were heavily influenced by males through both a larger number of interviewees as well as all three male translators. Yet we were still able to gather 25% of our information from female informants. We were worried that our information may be biased because of the patriarchal structure of the society. With intentions of encouraging a more comfortable interview environment for females, two of our three members in the social team were women. Our informants had four siblings on average, with about six people per household. The number of children per family usually averaged around six as well, indicating that many family members no longer live in the community. (This could support the doctor's information regarding a cyclical manner of males leaving for the military, labor in cities, and even fleeing to other countries.) Every person interviewed worked as a farmer for subsistence with

extra money coming from labor in cities and the sale of livestock (which once more indicates the reason for the importance placed on water for their livestock)<sup>7</sup>. The generation we interviewed consisted largely of people who had received no more than a few years of school. A few of the younger members had completed their formal education, while some of the older generation had never attended school. However, all of the children in the community pursued the equivalent of a high school diploma with the exception of a woman who was recently widowed. She needed more of her children to help support the family. (As an interesting note: While we found the community to be much less communal than we expected in regards to cultivation, they came together in a large effort to support the widow and her family. Also, we noticed the community coming together to lay pipe for an incoming waterline, thus hinting at the fact that communal efforts could potentially be utilized to increase the success of a water system). We found that local skills included plumbing, electrical knowledge, teaching, and traditional healing. Also, supportive sentiments regarding education included the need for expanded occupational opportunities, knowledge empowerment, and literacy. Lastly, the largest obstacle towards education was money. The time taken away from the fields is certainly a financial loss, but even more apparent is the expense of uniforms, supplies, and hygiene products. Children are not allowed to attend school in Bolivar in an unrepresentable manner. What constitutes unrepresentable, however, remained unclear. We found little aberration in the information provided by community members, thus indicating that the responses may accurately represent the community as a whole.

### Water Quality Information

All households with the exception of one had dug their own wells. Families on the lower side of the river were able to build wells in between their homes and the river. Due to the flatter topography, they are able to access the water table with very little trouble. On the opposite side of the river where the original community was founded and more families live, the bank is much higher. Therefore, these households build their wells in the river, or have no well at all. The sources of water used for different purposes seemed to have no unanimous response from the families. Some homes used well water for cooking and drinking, the river for clothes and dishes, and the well for everything

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<sup>7</sup> Peppered throughout Susana Narotzky's *New Directions in Economic Anthropology* is discussion of the difference between the informal and formal economy. It brings to light the relation between the 'counted and unaccounted' in practices and ideology in the informal economy, family business and home life of Chivirapi. This is particularly regarding the choice many young men must make between income from the formal economy - working in Oururo or other towns - and physical labor in the village. Another book that sheds light on the issue of outward is migrant workflow is Browne and Milgram's *Economics and Morality: Anthropological Approaches*, which discusses the balance between societal needs and economic pressures.

during the dry season. Some families did not discriminate and seemed to use the river water for all purposes. However, there did seem to be a connection between the side of the river and the purposes, most likely due to an issue of accessibility. It seemed as though families on the lower side are able to use well water for drinking and cooking throughout the year, while the opposite side of the community is not afforded the same luxury since their wells are in the river.

Water that is collected for consumption is apparently not purified in any manner. The people of Chivirapi have been informed about the benefits of boiling, and some do practice this method occasionally. Yet there seems to be a logistical problem. Families struggle with a heavy workload and have very little free time. Boiling water requires a large amount of time as well as the use of fire in an area with little readily available fuel. Beyond the additional input necessary to purify the water, they seem to have noticed negligible benefits for the work required.

There was a unanimous understanding of who came to the village in the past and what they did. Some people had more accurate details than others, but generally everyone understood that some form of organized entity, whether it was governmental, NGO, or combination, came to the village and set up the tanks and affiliated system. For the most part, people were unhappy with the results for a number of reasons. People were upset that it facilitated only one side of the community – the smaller and more accessible lower side. They were unhappy with the taste and color of the water. They claimed it came out salty and reddish, and they were disenchanted with the incredibly short amount of time it actually functioned. While answers varied, everyone agreed that it did not last longer than half a year. Responses became even more divided when asked if the organizations returned, fixed the broken system, or trained anyone to repair it. About half of the responses showed that they did train someone, but the training was inadequate. The other half had no knowledge of any training. Half of the community believed someone returned but did not fix the problem due to either bureaucracy or an available source. The other half of the community was unaware of anyone ever returning to fix anything.

While it is disenchanting to hear that communication and knowledge transfer was conducted poorly in the past, there are clues in this mess of miscommunication for how the EWB group may approach the situation in a more appropriate manner. If an organization did train anyone, they did not provide an adequate understanding. Also, they kept their knowledge limited to a finite number of individuals which could contribute to the power differential we notice through both doctor as well as community interviews. The doctor noted that the community did not support the trained individual. By providing a specialized knowledge to one person or a small group of people the status and power structure of the community is in effect manipulated. In the doctor's scenario this has led to a failed

water system. Without taking too many liberties, a situation like this could hypothetically privilege an individual as well. The reason this information is believed to be valuable for analysis is because the team can potentially curb a problem with system failure and community imbalance by implementing a better knowledge transfer model with more equally distributed education communication.

Finally, in an attempt to better understand what type of system would be appropriate to design for the community, the team asked about their ability to finance the maintenance of a system. Money is the most obvious detriment towards education in the community, and likewise it seems to be an obstacle to the complexity of available technology. The answers were again split when asked what amount monthly they would be able to contribute towards a water system. Some households said they could not afford to offer anything, while over half were willing to provide 50 centavos (approximately \$.07 US) per day. This is one of the most fundamental pieces of information we have acquired. Whatever system is designed must be able to function with an incredibly low maintenance budget.

#### Sanitation Practices

The community lacks any form of latrine system. Human and animal waste is dispersed throughout the region without any blatant consideration for hydrological systems. It seems in general people relieve themselves out of view from communal areas, but do not consider whether their waste will flow into the watershed. Animals are run through the river bed daily leaving behind large amounts of feces. For the most part people seem to wash their hands with some frequency before preparing food and after relieving themselves. Yet, due to the economic constraints of soap, what is considered washing usually consists of a simple hand rinsing. This can be even more problematic if water is reused in a communal pool for hand rinsing, rather than attaining fresh water. Furthermore, all forms of domestic waste seem to be dispersed indiscriminately throughout the community. Sometimes trash is burned in a hole or in the river, and other times it is simply scattered throughout the area.

#### Community Health

Our informants often referred to knee, back, and joint pain as their primary ailments. This is likely due to the hard physical labor demanded by their subsistence strategy. There was another common pattern among women specifically. In general, most females had an internal pressure that they explained as some specific organ which could not be properly translated. There was one

household with two girls who could not pee because of the amount of pain the pressure caused. When receiving care from the hospital they were told that the pain may be caused from working on the loom, which lies on the ground and requires women to be bent over for long periods of time daily. Other community-wide ailments included diarrhea, fever, flu, and cough. The reported frequency suggests people are bedridden an average of three weeks per year. This is a rough approximation derived from an averaged report of becoming ill three times per year. Furthermore, lengths of time varied. Some people reported a sickness making someone completely bedridden for about a week; others close to a month. However, some reported to never get sick, and others provided unclear time frames. Ultimately to gain a more accurate sense of community health we would suggest recruiting someone with a medical background. Although for our purposes it seems apparent that the responses given regarding community needs, ailments, and the doctor's comments all align. The primary outlier is nutrition. The community responded negligibly on nutrition while the doctor noted it as a top concern.

People seem to get sick from diarrhea about the same as they do from flu. Of course this is not necessarily seen as good information, but it is a bit different from some of the expectations held by the team prior to arrival. Due to the reports we had received and the general information regarding contaminated water in developing regions, there was a preconceived assumption that there would be a noticeable health risk to children. This does not suggest that children are not at risk in the community. On the contrary, we note that children in Chivirapi most certainly do suffer from diarrhea and flu which we learned from our interviews has in some cases ended in death. What deviated from expectation was the lack of perceived crisis. Community members did not note any abnormally high infant mortality rates. Neither did they indicate diarrhea specifically as a major issue. They acknowledged flu just as prominently as diarrhea, and did not emphasize a critical severity. We have to ask whether or not the community has developed coping mechanisms amongst the social mentality to deal with hardship, whether the risk level is not at an intolerable level, or whether their notion of acceptable risk is different from the teams. Also as an important note; some people were under the impression that the water may make them sick. However, it was not unanimously made explicit that the community wants potable water because of health risks.

People do not receive medical treatment from the hospital for a number of reasons, but the primary is the cost of care. Only in situations when the family has no choice because of the desperate nature of an illness will they take someone to the hospital. Another reason for avoiding the hospital includes a mistrust of the doctor and the medicine he prescribes. Generally, all people resort to natural healing techniques. These include spiritual measures to ward against evil magic as well as herbal medicines using eucalyptus and other naturally obtainable plants. The team believes that this is critical

information because it directly affects the nature of any education initiative taken regarding health and sanitation. There are many positive aspects to this information. Because there is a trusted healer, proven methods of healing, and a generally open mentality to the concept of foreign contamination, it should be possible to design something in conjunction with the already established authorities – spiritual and political - and the already used methods of prevention and treatment. Furthermore, it is understood that attempts to teach about health and sanitation from an authoritative position such as the doctor's has been predominately unsuccessful.

### Community and Crops

The community members of Chivirapi stated in no uncertain terms that water is the most important thing for a better life. Contrary to another set of preconceived notions the team held when planning for the trip, was the full extent of demand for a water system in the community. In attempt to prepare for a multitude of needs it was considered that there could be a demand for an irrigation project. Yet when the social team surveyed the households it was discovered how imperative an irrigation system is for the people of Chivirapi. Many people rated potable water as the top priority with irrigation right behind, some on equal level, and one person stated the need for irrigation over potable water. The rationale behind an irrigation system seems to be twofold. On one hand, the community does not produce enough food to adequately support themselves. At certain points throughout the year people suffer from hunger. If they had irrigated crops they believe they would be able to increase their yields for subsistence reasons. The second reason, however, is the possibility for profit. As noted many times before, money enters the community through urban labor and the sale of livestock. If they could produce a surplus of food they would not only be able to feed themselves throughout the entire year, but could have the option of selling surplus yields to supplement their finances. While it would most likely not be enough profit to eradicate migratory labor, it would most likely reduce the amount of time spent away from the community, fields, and family.

## Chapter 4: Methods

The following analysis seeks to better understand the personal perspective of the team members from the Chivirapi Assessment trip. This research is an anthropological study anchored in ethnography and applied methodologies, and has been conducted in collaboration with both philanthropic engineering organizations mentioned in the previous description, Engineers Without Borders and Engineers in Action. The contributions provided by team members of both organizations comprise the subject matter of this research.

The majority of the work I coordinated for Engineers Without Borders was qualitative: gathering data about community sanitation behavior, water use, health, income and subsistence patterns. This was used for the informing of the team and project planning. Although I chose to explore qualitative findings in my exploration of the developer's perspective, I believe qualitative research by anthropologists can have as much, if not more, practical implications. In *Speaking the Language of Power: Communication, Collaboration and Advocacy*, David Fetterman demonstrates how ethnographic insights and research findings by qualitative researchers throughout the world have made practical differences in issues such as environmental health and safety, educational reform, AIDS education and homelessness. He presents the findings of the research as being socially vital by showing immediate impact on sponsors and policy decision makers.

The specific goal of this particular work is to determine whether there are inherent themes and similarities that can be drawn from informant interviews, and to determine whether the given themes can provide any meaningful discussion over the nature of development work. Foremost, this information is valuable for understanding the collective team's experience as they worked in the community. As a specific outcome, this work is aimed to contribute a historical document that will prove useful for the University Chapter of EWB so that they may have record of the work that has been conducted in the past and the impact that it has made on their peers. Likewise, as the UI team is committed to Chivirapi for a minimum of five years and students typically move along quickly, it is hoped that this information will help transfer data from generations of team members so that the working knowledge is not lost. The ultimate goal is that if information is better retained, then the team may be able to more effectively help the community they serve.

All team members of EWB-UI, the head of EIA La Paz, our EIA liaison, and our hired translator have contributed to the field data collected for this study, making nine informants in total. Interviewer identity as an American researcher, peer, and friend could have affected data collection in interview sessions because of cultural recognition, informant comfort, or other unknown factors.

Beyond these variables, interview sessions were chosen by opportune timing and willingness to interview. All interviews were recorded with signed permission by the informant (see Informed Consent Form in appendix) Interviews were conducted in a semi-structured manner with a framework of one primary question to initiate the conversation - “What is international development?” Answers to this question were not limited in any manner. Rather, conversation was encouraged in order to explore informants' personal experiences and opinions further. Interviews lasted for an average of thirty minutes and ranged in topic depending on the informants' chosen focus.

The analysis of interview data has required a system of transcription organization that allows informant responses to be categorically collated by theme. Therefore, transcriptions were dissected by topic, and then labeled generically to encompass the subject matter. Once each transcription was separated into a series of subject matters based on word frequency, the topics were grouped by similarity. Twenty eight major groupings have been identified. The groupings were then organized by the number of informants who spoke on the subject. Out of nine informants, the most popular subjects were raised by six people. This grouping by popularity was conducted to identify which themes are likely to be the most equally experienced by team members. The groupings were then dissected once more by page number to indicate the interest of informants on each theme. For instance, Shared Knowledge was discussed by five informants, yet only comprises three pages. While Conflict Over Purpose was discussed by only three informants but comprises six pages. The reason for this disparity is open for interpretation, but it could be assumed that Shared Knowledge was something that interested the researcher; not the informants. While on the other hand, Conflict Over Purpose stirred enough of a response to create a large amount of conversation with a smaller number of informants, perhaps suggesting that this is a topic that deserves attention. Lastly, the themes were organized for presentation and analysis in this document by popularity, omitting the themes that rated 2 or lower in order to focus on the most important themes to the informants.

Themes have been organized here by a series of two numbers. The first represents the number of informants who discussed this topic. The second number represents the number of pages that this transcript grouping equals. For example, 1.2 Economics & Industry was raised by one informant, and discussed for two pages.

- 1.1 Creating Change
- 1.1 Bolivian People
- 1.1 Community Labor
- 1.1 Public Support
- 1.1 Health Care
- 1.1 Perception of Chivirapi



1.1 Cultural Impact  
 1.1 Professional Incentive  
 1.1 Sustainability  
 1.2 Economics & Industry  
 1.2 Project Success  
 1.2 Foreign Involvement  
 2.1 Funding and Government Partnership  
 2.2 Poverty  
 2.5 Political Instability  
 3.3 Community Buy-in  
 3.3 Global Motivation  
 3.3 Quality of Life  
 3.4 Transformational Experience  
 3.6 Conflict Over Purpose  
 4.4 Education  
 4.6 Resource Efficiency  
 5.3 Shared Knowledge  
 5.4 Happiness  
 5.5 Expectations of Development  
 6.4 Defining Development  
 6.6 Personal Motivation

Beyond striving to avoid misguiding public opinion, this research also seeks to mitigate any risks to interviewees or organizations' reputations. Data collection methods and maintenance have been approved by the University of Idaho's Instructional Review Board as required in good process when performing research on human beings (see appendix). There are four primary methods taken to protect identities and reputations. Informants have been provided with an interview consent form that explains their rights as an informant to decline interviews, review work, and retract information at any point in time. All personal and specific details that could identify an identity have been removed from this work. Each transcription and final drafts of this thesis will be provided to the informant for review via contact details provided at the time of interview. Finally, all raw data, notes, and specific information will be protected by the researcher in a secure environment. Audio recordings are kept on the original recorder used to capture data, as well as the researcher's personal computer. The original recordings will be deleted when this research is published. Audio copies on the personal computer will be kept secure by an alphanumeric password. Field logs and informed consent forms will be permanently kept in a locked environment. Data will be destroyed upon retirement or by request of informants.

## Chapter 5: Interviews

This section presents relevant excerpts for each major thematic grouping. The responses have not been modified in any manner beyond clipping from the original transcripts. Footnotes throughout this section represent field notes that provide context, or share personal reaction to the subject matter. A summary of each grouping precedes the interview excerpts.

### Defining Development

This was the opening question for nearly every interview that was conducted. Most notably informants pointed out that international development tends to focus on the improvement of infrastructure within a community or country, and that this is part of a progressive process designed to raise societies to Western standards of living. Education was noted by many of the informants to hold an equal importance with infrastructure, and in fact could also be described as a vital tenet of the development process. Subsequently health, happiness, and human networking were described as pertinent functions, or even goals, of international development as well.

\* \* \*

*J: I'll just start by asking, when you hear the concept or the term development, specifically international development, what do you think of? If you were to come up with a definition?*

*#: Specifically international development? Okay, let's see...usually I think what it means to me and what the definition that people think, may be two different things, I'm not really sure. But to me it really seems like bringing places up to Western standards – making it so they live like we do, have all the same amenities that we do, and it's mostly focused on economics. To me I think that it would be better served to think about it a little more broadly, development in terms of education. And so I've got no experience in this except for what we're doing in EWB right now, but to try to think about Chivirapi as developing to our standards just seems ridiculous to me. Whereas I think we can help them develop in to a healthier community by working through education. And what we've talked about is educating along the lines of water and sanitation and that sort of thing. I guess that's kind of what it means to me. There's two different things really at play there, development in a broad sense or development in a narrow kind of economic sense. And from reading about development projects by NGOs, big NGOs, seems like they're mostly interested in economic development – you know, so people will buy I Phones (cheeky). Or at least speakers for the roofs of their houses, right?*

\* \* \*

*J: Well what's the difference between those? What's the difference between what we call development in the United States, and what we call development when we go somewhere poor?*

*#: Well, it's a cultural thing. We do work in poor areas here for sure, but us working in the United States doesn't affect the culture of the United States, we are the culture of the United States. Coming from outside, we are a different culture. They're seeing different things. There's different standards of living here too, but...I hadn't really thought about that. There is some similarities too, and we're not doing it for free, or volunteerism either. Although EWB and there are some other groups are doing domestic projects now too. Well, EWB is not doing domestic projects yet, but they're trying to develop a way to do domestic projects in needy areas, volunteer projects.*

*J: But...I guess something I'm trying to figure out is, I guess, it seems like when development is done here there's a paycheck for someone somewhere, but it's not treated as a business or a business model when development is done in a foreign country. Do you see that as a problem?*

*#: Well not necessarily true I don't think, because EWB itself is a business. And EIA is a business. And they are doing that as a business.*

*J: Right, but I'm talking about the product itself that's done in the community. So if we want to put in a water system for a community in Idaho, that money is not raised through fundraising, it's taxes or if it's a private area, then someone's footing the bill for that. But when we do it through charity, when it's done somewhere else...what would the difference be if we could just do it as a business?*

*#: Well, where would the money come from I guess, we would be getting paid...I'm just thinking through what you're asking. So we get paid to do this sort of thing, we get paid to go down there, and I guess that's the difference in the source of funding, and who gets benefit from it.*

\* \* \*

*#: Well you know it's easy to write off the bat think that what we have in America is more like what we want to impose on the rest of the world. When we think of, how we have working toilets, and how we have, and we still have a lot of problems here, but it's easy to look at countries like Bolivia where we were and just look around and think this is so different from the life I came from. And wouldn't it be great if they could have more of the amenities we have. 'Cause you know, we're so lucky (sarcastic tone). I guess for me, it's a really difficult concept to define. Because you know, I've talked to you a bunch on the trip and it's not black and white at all. I don't know if you can pin it down, what development is. Because to every individual it can be something different. To the Bolivians there,*

*they're happy. And I guess the goal in life is for everyone to be content with what they're doing, you know, raise a happy healthy family. Happiness really, and health I guess. Which, you know, in our minds they're sick all the time but that's the only life they've ever known. I don't know. If your goal in life is to be happy, healthy, successful in your own right, if you live in a place that allows you to do that then I'd say you're living a developed lifestyle I suppose.*

\* \* \*

*#: International development, I guess that would be when a person or generally a group I would say, from another country steps into another country to aid them with some sort of project that they presumably wouldn't have the resources or the money or the know how to do on their own.*

*J: What do you mean by aid them? What kind of aid are we talking about?*

*#: I think that depends on the development project. It can be in terms of technology, building something for them, I think that I would consider things where you're helping educate or helping enhance something like a school to expand, I would consider that a development project as well.*

*J: What is the point of that? It sounds like you're saying aid and help a lot, but what is the end goal of all that help and aid? Why are we doing that?*

*#: Ideally it's to enhance their quality of life and give them more opportunities.*

\* \* \*

*#: I guess, depending upon how you define development, I've done other volunteer type of things. I assisted with education. When I was younger I volunteered at a library and read to kids, and I thought reading, to me, is a type of development. I would say this is definitely the most significant development project I've ever participated in.*

*J: What's the definition of development? If it can be as simple as reading to children in a library, or it could also be engineering a water system in Bolivia.*

*#: International Development obviously has that extra element that kind of adds a whole different aspect to it. But I think development is aiding with infrastructure, education, technological developments<sup>8</sup>. I think it could be a lot of things. I don't really know what the dictionary definition of it*

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<sup>8</sup> "In Peter Uvin's poignant book "Aiding Violence: The Development Enterprise in Rwanda," he contends that the development business, by the very nature of its mission, contributed to a state of severe inequity and "structural violence" that eventually led to a situation of ethnic hatred that caused the 1994 genocide. While development work such as "aiding with infrastructure, education, technological developments" does not seem as if it could cause harm, the underlying drive and intentions still need to be kept in mind, not just the

is.

*J: But is this under the assumption I guess, of going back to improving the quality of life?*

*#: Umhum (yes)*

\* \* \*

*#: International development, I don't have a right term for that but I think that it's an important thing that all the international countries have to deal you know. It's an important thing for me, so probably without America, probably have the "Cuncacan". So there's a lot of principal countries who have a reunion and they talk about the development of all these poor regions in all of South America. So I think they are trying to make some good work right now, but it's some work they will start in the future. Right now they are just starting to make it.*

*J: But when you're talking about development, and it's a good thing for these countries to help, let's be more basic. What exactly is development?*

*#: I don't know how it really works, development, so probably you can tell me about that a little bit so I can figure out in more specific words.*

\* \* \*

*J: So then, that's the impetus to be a part of the global development scheme...What do you think, if you were to give a definition of development what would you say?*

*#: I would not be able to give a definition of development. I would say that my best stab at it would be a, basically a, and what I think about it, and what I want to make it, whether it's a good definition or not would be: Humans helping humans and building connections as much as infrastructure<sup>9</sup>.*

*J: Well you don't have to give Webster's definition. That's what it is for you though?*

*#: That's what I wish global development is. I don't know, I imagine there are plenty of bad apples, and plenty of great and fantastic people. And I don't know enough about global development. I haven't been, my two years in the University of Idaho, EWB chapter has hardly qualified me as an expert on global development. But that's what I would like it to be. Maybe just in my psyche that wants*

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obvious impact of the work.

<sup>9</sup> The degree of 'humans helping humans', or cooperation for a common good, is not considered an indicator of development in any of the United Nation's measures, including the Human Development Index (HDI) and their Multidimensional Poverty Index (MPI). It is interesting that this is the definition this respondent comes up with.

*validation for what I'm doing. That's what I would desire that global development is.*

*\* \* \**

*#: Do you mean like, in what context, or just in general?*

*J: Good question.*

*#: Do you mean in the context of a community, or in the context of a building, I feel like development can mean a lot of things.*

*J: Okay, well in the most vague, abstract sense...*

*#: I think it gives, or has a connotation of incomplete, or not being completed. That something is, it's not just improvement upon something that's already finished, but it's in process. When I think of development I think of something in process.*

*J: Okay, so when we talk about that in the sense of a country, does that mean that the country is in process?*

*#: Yeah, I think that, that's what the term means, so when we talk about a developing country, we're talking about it coming from whatever state it's in now up to a competing level with whatever we consider to be a developed country. They've finished the process, whatever we have termed the process to be.*

*J: Okay, and what do you think of when you think of a developed country?*

*#: Having...I think infrastructure is part of it. Having water systems, having roadways, and having systems to care for those things is a big part of it. And then other things flow from that. Like hygiene is in there and whenever you have a good road system then also your commerce goes up. A lot of things stem from that.*

*J: And which countries are we talking about specifically?*

*#: (nervous laugh) uh, mmmm, I...*

*J: Or do you not know? Do you have a concept of countries that you usually think about when we talk about developed countries?*

*#: Yeah, I think of like European and American and then there's probably some other countries mixed in, but for the most part that area.*

*J: And so essentially, if I've got it right based on what you're saying, the idea of taking a developing*

*country would be to bring it up to, or try to bring it up to an equivalent level of development, of structure and infrastructure as European or Western Models<sup>10</sup>?*

*#: I think that's what I think of when development comes up.*

*J: I think that's pretty fair, and what countries are we talking about when we talk about developing countries?*

*#: I think that's harder to define because there's a lot of countries where it comes down to what percentage of the country has to be developed before you can consider it a developing country. Take Bolivia, parts of it are plenty well off and developed, have infrastructure, and parts of it have nothing. If you want to break it down mathematically you could say well 80%...you know.*

*J: So it becomes difficult to define, but in general terms we think of?....*

*#: I think of large parts of Africa, I think of rural Asia, and different area, I feel like South America has a lot more of a mix of developed and undeveloped.*

*J: And so we can try to define, sometime as you pointed out, a country isn't necessarily all of it - developed or undeveloped, sometimes it's parts of the country, which you may be able to see in the United States.<sup>11</sup>*

*#: Yep.*

### **Personal Motivation for Development**

The general sentiment regarding people's motivation for being involved in development was centered on the concept of helping, as may be expected. Some informants felt a desire to give back to their country or the global community. Some informants received a positive feeling of personal satisfaction with the work conducted. Also, there is a strong recognition of creating positive change through human interaction and physical construction. By working alongside communities to offer a

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<sup>10</sup> In Arturo Escobar's 2011 edition of "Encountering Development," he reviews the changes that have occurred affecting what development fundamentally is since the book's original publication in 1995. Power structures in the world are rapidly changing, and his argument that the concept of 'postdevelopment' needs to be redefined to meet today's significantly new conditions is particularly applicable to new understandings of what development physically means, cognizant of emerging rapidly developing nations such as Brazil and China.

<sup>11</sup> In "So Rich, So Poor" Peter Edelman explores the problem of poverty in the 'richest country the world has ever known', the USA. He finds that poverty in the US has arisen from a combination of low-wage work, a retrenchment of social investments, and a concentration of economic and political power at the top. It was important for me to keep in mind the situation of poverty in our own nation throughout this project, in order to maintain a holistic, universal perspective.

service, a certain type of camaraderie is perceived to result that will ideally benefit both the developer and the target community.

In *First-Year Students' Plans to Volunteer: An Examination of the Predictors of Community Service Participation*, Cruce and Moore explore the societal, personal and academic factors that are likely to lead a student to be a part of service learning. The underlying question to their study into the factors is - why do they do it? What do students get out of it? While it is a commonly asked – and answered – question, both in anthropology, psychology other fields, the authors of this paper say “the benefits of service-learning and community service can be distilled into three broad categories – educational, vocational and social.” Each category, they say, represents an area of student development that is highly desired by college administrators and educators (Pascarella and Terenzini 1991<sup>12</sup>, 2005).

\* \* \*

**J:** *So why do you two do it?*

**#:** *Well for me I studied in the U.S., and I think this is a way to give back to my country for what I learned and what I was able to learn. And I think that's one of the...it's like when you do your military service. You do something for the people who have the least. I feel that's something I feel like I'm helping<sup>13</sup>.*

**#:** *Yeah for me it's like, the very first time that I made this it was in high school. We used to go to make some social projects for communities once a year. And it was cool you know. Once I finished university I was helping Engineers in Action volunteering. And I just love it. I think at the beginning I thought okay I want to do this for one year. I want to do this for one year because it's pretty cool, it's a lot of fun; you know I want to help. And after that year I was like, I don't want to stop doing this. It's just great. I wake up in the mornings satisfied with my life. And it's not like sometimes I think that I can do more. Because I feel like I have more capabilities what I'm using. I think that I can do a lot more about science and things. But this is great. I love it. Since I've been smiling doing this, I will keep doing it. It's just great. And it's a lot of fun. You have fun when you're in the communities and you talk to Elojia, or Nicholas, or Juan about their lives and love and telling them a joke. You have a lot of fun. It's really fun.*

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<sup>12</sup> Pascarella, Ernest T. and Patrick T. Terenzini. *How College Affects Students: A Third Decade of Research*. Jossey Bass, CA, USA 2005

<sup>13</sup> In a book about people's drive to change the world, "How to Change the World," David Bornstein cites a recent Harris Poll that found 97% of Generation Y are looking for work that allows them "to have an impact on the world."



\* \* \*

*J: So you didn't start off being paid though, you were interning for the first year?*

*#: Yes, I didn't officially. But the guy who was here was an American and he didn't know much about where to get materials, so he was calling me all the time. And I was like, yeah I can help you. So I just travelled with him all the time. At some point I got this offer from these guys in another company to work for them. I went to him and said I want to work for you. I want to work for Engineers in Action. Can you find me a job? And he was like, well I'll see what I can do.*

\* \* \*

*J: Yeah, when you finish school. Will you leave for another country or will you stay in Bolivia?*

*#: Probably for have more knowledge, for a lot of things that we don't have here, and also I love to travel. I love to share knowledge with other people. You know, to share the customs, to know about everything. But if I want to live here in Bolivia? Of course I want to make a change here. I want to work for the people. Sometimes you don't need a big group. If you know you are making a difference probably you are making something good. Not just for yourself. And probably someone will know that. I will say, well he's making a change. Why am I not making that change too? Sometimes I want to leave this country, yeah a lot of times. But I don't want to be like the rest of the people. They just see the easy way and they go out. They don't have a challenge. And I want to risk. I want to take that challenge. Maybe I'm not going to change an entire community life, but probably I will change one or three minds. And probably two of that three minds will do the same. And that will create a really good change of that.*

\* \* \*

*J: So there aren't any programs for people to volunteer for this kind of work in their own country?*

*#: For this kind of work, probably, actually I'm a volunteer in one program who's name is Un Techo Para Mi Pais. We go to poor communities to build houses. We build houses in poor communities. I like that.*

*J: And the people who volunteer with you, do they have a different mentality than other people?*

*#: Yeah. They almost have my mentality. But we are just a small team. And we cannot share the knowledge we know to the other people because we just have a small reunions and then we travel to communities. So we cannot show all the progress to the people of La Paz. Yeah we tried to make some programs to have more volunteers to change more minds. But a lot of people just don't care. You*

*know, I work, I study, I do a lot of things. But if I want to have time for that, I will try to figure out how to have time for that. I have to do a lot of things all the days. I have to work, I have to study, I also have to practice because I play tennis, so I have to do a lot a lot of things. But sometimes I'm really tired but can I give one more hour for them? For being at the meeting, for being at that reunion? Yeah, because I want to make some changes here. I want to help people.*

\* \* \*

*#: It builds a community. You want to talk about, you know development, that's one thing. Do you build like infrastructure or are you talking about developing a community?*

*J: Well and that's I guess the goal, is to make them one and the same.*

*#: Yeah that would be exactly the goal is just...to make everything we do be part of the community togetherness. Because we can't go in there and you know, Oh we're the American engineers, we're going to do this thing for you because we're just so educated. That's not what it's about.*

*#: You're not going down there as Christian missionaries to build houses and get to heaven.  
(Laughter)*

*#: No, it has to be community originated. It has to be community driven. And it has to be community supported.*

*#: Yeah, what do they want?*

*#: That's exactly it!*

*#: Like, here we built something for you...Well we don't need that. (laughter) We don't need a community house right now. We just need access to fresh water.*

*J: Here's your school. Now let's get you a teacher, let's get a board together...(laughter)*

*#: Now let me get you that price while I'm here too. (laughter)*

*J: I wouldn't take it that you could possibly be jaded on Christian Missionaries.*

*#: You know I did that. It shaped me, it shaped me as a person and when I was there, the Mormon missionaries, we had one day a week to do service and that was awesome. It was always like that. It was the best part of the mission. We would go to somebody and say like, "hey what do you need done?"*

*J: And that was actually redeeming and all worth...*

*#: We're laying a floor for our adobe house next week on Wednesday do you think you can show up? We're like hell yeah! We'll be there.*

*J: And then you actually connected with them?*

*#: Oh yeah! You got to meet them and it wasn't about...*

*#: When you're working side by side with someone it's different.*

*#: It was the ultimate kind of like, from an atheist now but, like Christ-like work. I don't think love and helping others is a Christ-like attribute. It's just a human attribute. We all want to help.*

*#: And that's what I've come to realize. It's not about culture, it's not about ethnicity, it's about humans helping humans.*

*#: Yeah. We're 99.99% the same. We fight over the .01%. It makes us feel really good when you help someone. And whether that's here in town or...*

*#: But also you have that added like...working with your hands, having something done. Like even just over at Vlad's, building that brick. You start the day, you end the day, you're exhausted, something is done, something is completed.*

*J: At the farm too man. It's cool to pick 36 pounds of lettuce and be like, somebody's going to eat this.*

*#: Labor just makes you feel better as a person.*

*#: Going to bed exhausted at the end of the night. But exhausted in that way, not exhausted in the service way.*

*J: Not exhausted because you've stared at a screen for eight hours in a row.*

*#: Or even think about food service you know, as a server. Think about the exhaustion that comes at the end of the night with dealing with different kinds of people you're just...you're not really that physically tired, you're just emotionally drained.*

*J: That's true.*

*#: But working with your hands, and not only that, but working with your hands to an end goal to help somebody else...*

*#: But you guys, what you're doing, you're working with your mind too. Cause you design it and build it and everything. That's great.*

*#: That's the thing. It's very human, very human of you. That's what we do, we build shit.*

\* \* \*

*J: You were saying that you thought it was interesting, that in the interview with AI...*

*#: Yeah, like you just said, you guys have so much opportunity here. You guys are going somewhere where there is an opportunity, an opportunity to provide people with fresh water – something we take very much for granted. I think what it comes down to for yourselves, is that you're going to help people with something that's a very basic thing that we take for granted...*

*I understand very much where you're coming from because of that class. From hearing all of those atrocities, and watching all those videos and documentaries, you do feel a strong pull to making something better.*

\* \* \*

*J: Well let's back up. Why are we doing it?*

*#: We're doing it because they asked us to, basically<sup>14</sup>.*

*J: But there's a lot of people who would ask you to do things.*

*#: That's true.*

*J: There's more to it than that, right?*

*#: We're doing it because of, you know again, we concluded that Engineers in Action was a non-governmental organization that was worth working with. The people there were honest, and seemed like they had the best interest of the Bolivian residents, the Bolivian citizens in mind. And Bolivia was an area that is basically ready for change, and an area where we can have a large impact for less fundraising dollar basically.*

*J: But this is an Engineers Without Borders answer. This isn't your answer as a member of EWB. Right?*

*#: Yeah.*

*J: What's your answer as why you want to do this? Why do you want to go to Bolivia, raise money...*

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<sup>14</sup> This is an interesting response: “we’re doing it because they asked us to.” In “Whose Development,” within the section on partnership (pp71), Emma Crewe and Elizabeth Harrison comment – “Given the good governance agenda and aid conditionality, *the portrayal of partnership as a process of cooperation between equals is inherently problematic* (my italics). Could the attitude of ‘doing what they ask’ within development projects be inherently problematic, given the variables, assumptions and cultural understandings that may not be considered with a simple verbal/written request?”

*#: You mean me specifically?*

*J: Build a well for these people you don't know.*

*#: Because I believe there is...you know that's something I guess I...I want to do it because it needs to be done and it had to happen somewhere. I don't have a better reason than that, or a better answer than that. I guess because, it's something I have...throughout my development as a human being, and in these last few years, I've seen the need for humans to start working together to solve human problems. And clean water is the most basic of human problems. And without a better answer than it had to start somewhere for me, this was the beginning.*

*J: So if I can make sure I had that right, for you, you started to see for some reason in your development as an adult, you wanted to get more into helping people. And this seemed like the first opportunity for you to make a real difference in helping people with a basic human quality, or human need.*

*#: Yeah that's a pretty good summary.*

*J: But why, there are so many things we can help people with. Why are you interested in water and something more large scale like this? Why not something in your own town, or micro scale, or volunteering at a nursing home? Why is it raising fifty thousand dollars to go give people water?*

*#: Well I guess part of it would have to be because of the influence my engineering education has had on me. That's a part that probably makes me seek out a system like this. I mean then you could say the influence of working in the city of Moscow, in the office there. That has an influence on me. Seeing how our infrastructure works, is built, is maintained. That kind of pushed me a little bit. But also, one of the influencing factors for me was, I always fight this feeling that chemical engineers are the most useless of all the engineers. Because you know, it's a specialized, almost as specialized as engineering gets. It's focused on very specific problems. And it generally seems like it's for giant multi-million dollar companies that need you to save them a million dollars off their operating cost, off a pumping system for a venting separation. It seems. I don't know. It's hard to sum up, but it's not necessarily what I wanted my life to be about.*

*J: So, okay if I'm following right. Stop me if I'm wrong. I know you help people with their cars, with digging up gardens, with all of that crap everyday all the time. Because you like people, you like helping, and you're good at working. But it seems like, what you're getting at is you do have a capability. As somebody who is educated in engineering and it really interests you, and you feel like you can make more of a larger difference through using these skills that you really like. And you don't*

*care for the way those skills are necessarily being used all the time. You feel like you can make more of an impact in the world by using this skill set that you have. Is that right?*

*#: And I suppose more of an impact is the right word. For me it's like, you know, refining benzene from octane, is that helpful? Probably. But maybe it's just my need to be more at the centre of it. There are plenty of farmers that need octane to clean the parts that work, you know, etc. etc. Acetone to clean the parts that they use to drive the combines, that harvest the corn, that feed plenty of people. But I guess it's my desire to be there. It's actually probably a little selfish, but it's my desire to stand side by side with someone and work on something. And at the end of it say, I think we helped someone.*

*J: So then you also like the idea of being there in the actual human interaction, building a relationship with someone that you're actually helping?*

*A1: Yes, and that's one of the things I've seen more and more as I've grown older and my sphere of influence and my friends have fluctuated and seen. I guess, the relationships that we build are kind of at the end of the day, they shape us, they give us our influence, their kind of everything we have. And so to be there, face to face building that relationship, at the same time as utilizing the skills I love, problem solving aspect, and being able to work with my hands. It just appeals to me on a lot of levels I guess that maybe process engineer in a corner office at BP doesn't.*

\* \* \*

*J: Well what do you think about development in general then? Certainly you've got some sort of concept of, or did you, did you have any concept of organizations like Engineers Without Borders before you got in to it?*

*#: I had almost no concept. My concept of development work has been almost entirely developed since, in the last couple of years. I had done things with the Boy Scouts and done volunteer programs, and built docks at the county park, and plant trees at the old folks home, and put up a volleyball court at Children's Village. Those were all things I loved to do. They were fun, they were challenging, they were...you know, sometimes you work with people, sometimes you don't. I don't know, I think that anytime you're building a connection. And I guess that's a little bit of what drove me to go outside of the United States...was my larval idea of a developing global community. Whereas I wouldn't necessarily go. There's plenty of need everywhere. But I think that a big part of how humans are going to develop successfully is a successful global community. And I think that South and Central America, to be able to, not to bash on foreign policy that I don't know a whole lot about. We've put pressure on organizations in a lot of countries in a lot of governments in South, Central America because of our policies.*

*J: As the United States?*

*#: As the United States. It's time we start building human relationships. You know if it's one person meeting one person, that's one relationship. If it's one person meeting one hundred people that's... To develop that global community, that I believe personally is going to be so important for our species.*

*J: It's human beings making connections with other human beings to build the things they need.*

*#: Yeah. And one of the things, is it's EWB boiler plate. And some of that is good and some of it is hilarious. But one of the one's that spoke to me a lot, was about reducing sources of conflict.*

*J: So building things to create healthier, more peaceful environments?*

*#: Yeah:*

\* \* \*

*#: I don't know, my Aunt asked me when I told her we were going to Bolivia, she was like, or a few different place that I've gone, her question has always been "Why do they need you to come in? People are smart. If they needed a water system, why haven't they figured out a way to make it happen?" "I don't know I'm just going". Which is not a good answer, but it's a great question she had of, if they need that, why haven't they figured out a way to build that. And do they just not think that they need it?*

*J: So...if you haven't answered that for yourself, why are you still involved in development?*

*#: I think because I'm still in a learning process in trying to figure out a better way to help people. Because I haven't figured out a better avenue yet. I haven't stopped the direction that I have been going.*

*J: Do they need your help though?*

*#: ...*

*J: Do you feel like you helped anybody in Chivirapi?*

*#: No.*

### **Expectations of Development**

The collection of excerpts placed into this section discusses a multitude of feelings and expectations from hopeful to disillusioned. However, for the most part it seems that there is a

generally positive notion that the community is happy and productive, and therefore developing by their own initiative. Several informants had an idea that the community would be worse off than it was, which subsequently suggested a hint of resentment that the developers did not feel as if they were needed as much as they would have liked. It also seems that there is a general lack of education within the engineering community about infrastructure and development within the global community compared to the information transmitted through the typical engineering curriculum about domestic development. This lack of discourse could add to the expectation of being needed. It also seemed that many team members entered the community with a generally open and inquisitive nature, not knowing what to expect. After all, that was the point of the assessment trip.

\* \* \*

*J: Yeah, but I also think that development isn't really talked about or well understood in the National discourse.*

*#: No, and we're civil engineering, this program, and every other program, not every other program – I think some of them do international stuff, MIT does I know for example because they have link, but we don't talk about... We do development, that 's what we do, right? That's what civil engineers do, infrastructure, we develop. And we don't talk about the international component at all as far as I know in our program.*

*J: Which seems curious to me because in Bolivia we donate, “donate”, \$22 million a year. And that's just Bolivia, that's not the only country we're linked in. And then you think about the IMF and the World Bank and all of these things. How is this not something that we're talking about? How is this not something that's taught in school? When it's something that we're paying taxes in to, that our political agendas are playing in to<sup>15</sup>?*

\* \* \*

*J: So it really challenged your perception of what a developing or third world country is like?*

*#: Mmhhh (yes), cause I haven't really had access, or been around that very much. I've been on different vacation type trips where you travel through that sort of thing, but you don't really get to*

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<sup>15</sup> In “NGOization, Foreign Funding, and the Nicaraguan Civil Society,” Dean Chahim and Aseem Prakash examine the impact of foreign funding of local NGOs. Their findings are both disturbing and poignant - they find that foreign funding and the corresponding professionalization of the NGO sector creates dualism among domestic civil society organizations. Foreign funding enhances the visibility and prestige of the “modern” NGO sector over traditional grassroots organizations. “This has grave policy implications,” they say, “because foreign-funded NGOs tend to be more accountable to donors than beneficiaries and are more focused on service delivery than social change-oriented advocacy.”



*interact with the people in those sort of scenarios. Especially, cause I've done them mostly with my parents and it's kind of just like a "Oh look away children, Oh someone's going to try and rob you here." And that's in like going through Mexico where it's a little different, but there's this idea that people in those sorts of situations are desperate and unhappy, and those are totally separate cases – this community in Bolivia and in rural Mexico, I guess I'm just realizing that just because you're impoverished or you don't have access to all the conveniences that we do here in America doesn't mean you aren't happy.*

\* \* \*

*#: The one thing that's interesting is that you see these documentaries, and these documentaries are definitely, you know, their goal is to pull on your heart strings. Their making these, and it's not to say that what they're showing you isn't actually what's going on, but you know, you're not there to uplift someone, you're not there to, I don't know how to put it, you're not there to give them a shopping mall, and blonde hair, and ear piercings, but you're there to, if you go down to the fundamental human interaction and if you can work together alongside someone, and you're with someone who wants you to work alongside of them, and you can build a relationship. In the process, hopefully you're going to learn something, and hopefully you're going to better yourself in the process. Learn something more that you never knew before and make a difference, and provide clean water. There are terrible situations, but these people are tough, they've done this for generations. They've dealt with these problems for generations. That doesn't mean their problems to be solved. The one thing I guess I have a little bit of a problem with, is those documentaries, I feel like they tend to create pity. I don't think pity is a useful emotion.*

\* \* \*

*#: Those children's commercials, where you sponsor a child.*

*J: yeah, Feed the Children.*

*#: Exactly, horrible.*

*#: I mean, and you have to be able to be a mature adult to watch these things from an objective point of view. Yeah they're telling this story, but what aren't they saying? You know, what's the other side?*

\* \* \*

*#: It's why I'm so supportive of Nate and yourself going down there, because you really are trying to, and correct me if I'm wrong, figure out where you guys stop. Is the water where you stop? Do they require more than that, or do they want more than that?*

*J: Yeah, I don't know. As AI said when I asked him some tough questions, some of this stuff we don't know. That's why we're going down there now, is to figure that stuff out. But those are great questions to have in mind. Are other villages going to be jealous? Are we going to be able to present ourselves as partners and cooperatives that empower them, rather than saviors and American martyrs?*

*#: Right, are you being imposing as opposed to opposing?*

\* \* \*

*J: That kind of a concept? Alright, say we go to Chivirapi, we do all of this work, it goes how you want it to. What do you envision being a successful venture to Chivirapi?*

*#: If we could, well first of all, if we could get clean water that will, if children can live longer, if old women and men can live longer. If people can live healthier lives, without dysentery. That will ultimately be the measure of success. Well that will be one of the measures of success. Because also, the idea is to, community perception of both us and the project are going to be another way of measuring success. Because of...*

*J: us as Engineers Without Borders, or us as human beings, or us as Americans?*

*#: Both, honestly all three. If we can...You know, I have no idea what the community members think of educated American, Engineers Without Borders students coming in, what their opinions even are of us as a group. So I don't know if, I'm preaching to the choir or if I'm going into a place where they don't have a very high opinion of us. But it's not just about, if we can change their opinion of us in the fact that, if they think we're uncooperative, or we want to do things our way, if we can change that opinion that would be the best thing I think. Because if we can show, how people can work together, doesn't matter where they're from. If that's a lesson that even one kid can take away, that sense of cooperation. It's more than just borders, it's more than just skin color. If we could do that, that would be fantastic.*

\* \* \*

*#: I think there was an expectation of a little bit more concrete, 'this is the need, and this is how we will fix it'. And we came up with a little bit more ambiguous need, because they do have a lot of ground water, and the need just wasn't as at least as straightforward as I was expecting. Because they do seem to have sources for water. And they want to have, the things they want are basic needs, but are starting in the direction of "I want things because you're here to help, and so here are the list of things that I want".*

*J: That's what it seemed like to you?*

*#: Umm, there's an amount of irrigation that would be caring for basic needs, and then there's an amount of irrigation – I don't know where the line is – that would be starting a commercial business. Does that make sense? That if I can care for my family with this amount of irrigation, then I can irrigate the whole hill.*

*J: And you feel like that would be frivolous?*

*#: I think there was an expectation of a greater focus on basic needs.*

*J: And you don't think agriculture is a basic need?*

*#: No, I do. It's just, they do have agriculture, they do have a water source.*

*J: So then, the expectation of what you wanted to help with was changed? Is that right?*

*#: Yeah.*

*J: And so do they need your help anymore?*

*#: I think that someone else could be more helpful.*

\* \* \*

*J: So is part of the problem then, that the expectation we have that these people needed help with basic needs, but then you found out they already had the basic needs? How did that make you feel?*

*#: ...*

*J: Was that a shock?*

*#: ...*

*J: Was that unexpected?*

*#: Um...it wasn't a shock. I didn't feel like we had a good grasp on anything before we left, and we did have information that the municipality was working on bringing a water source to them. So I feel like there were already hints of the fact that they had some of their needs taken care of. And the need for Smiley to say "but don't feel discouraged, there's still stuff for you to do." Just that that was even a necessary comment to make, I feel like that was a hint that they weren't...*

*J: That's what he said?*

*#: Yeah, when he first found out the municipality had found this spring and was bringing it to them.*

*Talking about “But don't be discouraged, that's encouragement that they are going to be working with you and there will still be plenty of work for you to do and help with”. And we didn't understand or know if the municipality had, or I didn't expect, Bolivar to be so developed. That was a big; that was a surprise for me.*

**J:** *So do you think you're a bit disillusioned by it then, what you found – by the lack of expectations being met?*

**#:** *Yeah, probably a little bit. Like I want to be able to help people, and I want to make a difference and be effective in that. And it's discouraging to feel like that is difficult.*

**J:** *They don't necessarily need your help as much as you thought they did?*

**#:** *Or the ways they need help aren't the things that I can do. Even if I could help the money and effort to do the things that I could do, someone else could easily do. And so, just because I can do them doesn't mean that I should.*

**J:** *Those are kind of heavy realizations. Is there anything else that kind of surprised you about the village, about the community?*

**#:** *I didn't...I spent more time land surveying than talking to the people, so a lot of the information that I got was second hand.*

**J:** *Do you feel like the trip was worth your while?*

**#:** *I enjoyed it because I enjoy going to new places and seeing new things, but it felt a little anticlimactic. Because I didn't feel like we were, ... I don't feel like we found very good information that gave us clear direction of how to be effective in the future. Which is why I try not to have expectations of things, but I at least had the expectation that we would gather enough information to be able to see a clear problem and then discover a way to fix it.*

**J:** *Was the problem that we didn't gather the information to find a clear problem, or that there isn't a clear problem?*

**#:** *Probably both. If we spent a long time studying the systems and the way things work then we probably could have made things clearer, but it might just not be a straightforward as we wanted.*

## Happiness

*“One recalls the not altogether unfair stereotype of an anthropologist living in a village for years and emerging at the end with the view that the villagers are all splendid chaps who ought to be allowed to get on with agriculture in their own way, regardless of the fact that the world around them will not allow them to do so.” (Simmonds, cited in Nolan 2002)*

There are two primary themes that come from this topic. Some of the informants discussed happiness as something that they valued greatly, and found that the communities helped them find fulfillment. Other informants brought up the fact that they were surprised to find that the people in the community were so happy. Unanimously, informants who actually met the community members noticed their positive demeanor. Happiness was brought up at least once in nearly every transcript (some of which have already been displayed), which could raise interesting questions about the measures of development, quality of life, the transformational experience of students, and project success.

In their article *Volunteer Work and Well-being*, Thoits and Hewitt find volunteer work enhances all six aspects of well-being: happiness, life satisfaction, self-esteem, sense of control, physical health and depression levels. Conversely, they find healthy and happy people tend to seek volunteering opportunities more often<sup>16</sup>. They ask whether the impact on well-being and happiness of volunteering is a direct result, or whether it is simply that happier people are volunteering. After finding both are true, they offer service as a counter to traditional psychological ‘stress theories’, which have tended to focus on negative life experiences. With findings similar to those of Thoits and Hewitt, Joonmo Son and John Wilson find a clear causation between well-being – yet not necessarily happiness - and volunteer work in *Volunteer Work and Hedonic, Eudemonic, and Social Well-Being*.<sup>17</sup> The three dimensions of well-being they ‘tested’ for were hedonic (e.g., positive mood), eudemonic (e.g., purpose in life), and social (e.g., feeling of belonging to the community). They found volunteering enhances both eudemonic and social well-being, but not necessarily hedonic well-being, and the number of hours contributed made no difference. As expected and found in the prior-mentioned study, people who have greater hedonic, eudemonic, and social well-being were more

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<sup>16</sup> Thoits, Peggy A. and Lyndi N. Hewitt, “Volunteer Work and Well-Being.” *Journal of Health and Social Behavior* 42:2 (Jun 2001) 115-131

<sup>17</sup> Son, Joonmo and John Wilson, “Volunteer Work and Hedonic, Eudemonic, and Social Well-Being.” *Sociological Forum* 27:3 (2012): 658-681

likely to volunteer and, in the case of hedonic and eudemonic well-being, volunteer more hours.

\* \* \*

*#: You know this community is changing a lot. And we can see two different point of views about these projects. The first one is, the lives of these people are changing. Better conditions, better incomes, it's just great. We're doing great. But the other view is that working with the students will change more lives than just these people. Because the students get touched about these things. About living in this community, and you know about being working with them by hand, and knowing that I live here in La Paz. I sleep in a pretty comfortable bed. I have everything. It's a pretty easy life. But when you go to these communities you know how they live. You know how tough it is. You know they walk every day. They hike this mountain two hours a day and they always smile.*

*J: Why are they so happy?*

*#: I mean, it's their life. It just, there's a word for this, *autentico*. It's just authentic. It's just authentic. And you know I see these people and I'm like, wow I complain about stupid things. Like my house, like I don't know, really stupid things. And I see these people are just happy, truly happy. And the students can see that, and when they go back home they try to do something else. Maybe not for Bolivia, but in the future they think I've been in this community before and I would like to help people.*

\* \* \*

*#: Something else with these projects, you think oh I'm helping these guys you know and making a difference. But it's not just that. You learn a lot of these guys. You know when someone's telling you just plainly happiness. These people are so happy. They're just living their lives. They don't complain about stupid things that we complain here. You just learn a lot. It's not like I'm going to go and turn into a hippie, and start to walk in the communities. It's not going to happen just like that. But I just learned that when I'm leading my life I try to be more simple, and do the things more natural, more real. You see this is real life. For these guys living day by day carrying water buckets and they're just happy living their lives.*

*#: It definitely puts things into perspective<sup>18</sup>.*

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<sup>18</sup> In her chapter Volunteerism, Leadership, Political Socialization and Civic Engagement of the *Handbook of Adolescent Psychology*, Constance Flanagan shows how trends in the last decade have seen service learning programs rapidly become a normative part of public education. One of the findings of the studies she examined was that service learning did, indeed, give 'perspective' to student's lives as a whole – not a surprising find for any who have been involved in service learning.

*#: You come back here and you compare, ah damn I want an iPod. And now I'm like if I can get it I'll have it, but if I can't I won't feel like, I won't cry. I have everything here. I'm just happy. Everything in my life is just great. So you know as long as I can do this I'm going to do this. It's just awesome. I love it.*

*J: That's awesome. Did you ever think you'd do this?*

*#: No. Not at all. I did university and I was like real geek. I was the president of the student's association, and I did a lot of projects. I did a huge research project for my thesis. I was a real academic guy. I really like research. So I was like, I want to work for some huge company and do something you know, something like of huge size. At some point though I was like, this is really cool. You wake up in the mornings just happy. You wake up satisfied with your life. What else could I ask for? There was this guy talking about success, and he was saying something like success is not related to money. You can get a lot of money, a lot of stuff, and not be happy. So success, is about happiness.*

*J: I like that. So was it the people that affected you? That started making you think about happiness and a life towards happiness.*

*#: I mean, they changed my life. I love those guys, and have a lot of friends in those communities, that I consider friends, you know, really friends. I mean we can talk about anything. I see these guys working so much hard, just...*

\* \* \*

*J: And some of them seemed pretty happy too.*

*#: I didn't get that. Because I didn't do all of the interviews and know all that stuff. But yeah, to make it so they know that that's a good thing would be in my opinion would be pretty cool. They don't have to have that level of development that maybe the television is telling them that they need to have, right? There's lots of people in the US who are not happy.*

*J: (laughing together) You don't say?!*

*#: They've got all this stuff that does it for them, like my neighbors, I guess they're overall reasonably happy people but they drive their four wheeler down to check the mail for Christ's sake. And they complain about things, and I'm thinking man, you shouldn't complain about stuff. You don't even have to walk to check your mail.*

*J: That's a fine point.*

*#: And it's only one hundred yards, it's not like it's that far!*

*J: Yeah, I think maybe that's the trap, is there's plenty of happiness with all of our development yet we still like a warm shower, we still like certain things that we pursue to obtain because they do bring some happiness, but where is this nebulous level? I don't know. Maybe it plateaus.*

\* \* \*

*J: But do you think that's true in general, that we have a poor connotation of what poverty is, what those countries are like, what those people are like, and an assumption that since they're not like us they're unhappy?*

*#: I don't think it's necessarily that they're not like us, but I guess in a sense that they don't...since they don't have access to all of the things that we have access to, since they have to do manual labor, since they actually farm their own food, they must be unhappy because they don't get to sit and watch T.V. all the time.*

*J: Which they do. (joking)*

*#: Which they do! (laughing)*

*J: Somewhat.*

*#: 101 Dalmatians! What else could you want?*

\* \* \*

*#: The biggest work that you are going to have in your life is figuring out how you are going to live. You can do whatever you want if that makes you happy.*

*J: Happiness huh?*

*#: Happiness! Yeah, money make you happy? No. Money make you have more stuff? Yes. But is that happiness? If I buy a really good fancy car, I will be happy? Probably I will be excited, But I would not be happy. If I help people that makes me happy? Yes! That makes me happy with myself. I smile helping. That is the thing that makes me happy<sup>19</sup>.*

*J: Why is happiness so important?*

*#: Because happiness is about everything. For me happiness is about everything. Just live your life happy and everything is going to be okay.*

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<sup>19</sup> Thoits, Peggy A. and Lyndi N. Hewitt, "Volunteer Work and Well-Being." *Journal of Health and Social Behavior* 42:2 (Jun 2001) 115-131



*J: What makes you happy?*

*#: My life. Just standing here makes me happy. Having some food makes me happy. Having some clothes to change that makes me happy. Smoke a cigarette, talking with you, having the opportunity to know you, share some drinks with you, talk about life. That makes me happy.*

\* \* \*

*J: Do they seem happy?*

*#: Yeah! Happier, less stressed.*

*J: Where is this?*

*#: Different places. I've gone to Mexico a few times, and my trip to Costa Rica was just confusing. Maybe it was when I went down on a trip to Costa Rica. And I have no idea what the people do. They didn't have anything they farmed, they didn't have...they didn't really seem to do much with their time. They seemed fine with it.*

### **Shared Knowledge**

This section refers to the transfer of information that took place between the EWB team and their community partners. There is a considerable diversity in responses from this section that represents admiration, relief, and contemplation. It seems that the more experienced team members caution that there is a great deal to be learned from the community, while the newer team members are surprised to some extent by the information they have learned. The introduction has challenged their preconceived notions about life in the community and the motives behind happiness. There is a common thread, however, between all responses that draws together a feeling of respect for the people of Chivirapi, encompassing their knowledge, motivation, industrious nature, and cheerful attitudes.

*J: The students are from universities in the U.S. and you can see that it's making a difference in the way they see the world?*

*#, #: Yeah, definitely.*

*J: What about the indigenous? Do they like having people from other countries coming in?*

*#: They love it. They love it.*

*#: The thing is you know, I think they feel a sense of empowerment because a lot of times when you have visitors from abroad they come and see important people here. But when they come and see the villages it makes them feel special. They don't feel that they are in the last point in Bolivia. So at least some people care enough to be there.*

*#: But there's something else. I think that we can't generalize all of the communities or all of the EWB teams. I think each EWB team and each community is different. And you know, it depends on how you guys develop a relationship with them. I mean I love seeing these guys trying to talk with us individuals. The guys in the community just trying to talk about their daily lives or whatever. It's like wow, this is awesome. And something else, that I find to be very important is to be very respectful with their culture. Because you know they have customs. They have different kind of lives. And just be respectful is very important. Even talking about a project, about a design, about everything. I mean you can get a lot of information from them. So from my point of view it's very important to listen to them.*

*J: To listen, and to share information, correct?*

*#: I think a lot of failed development projects in Bolivia are related to not listening to the communities. The type of very paternalistic approach of – okay this is what is good for you. And the community kind of accepts it, but in the end they're not using it, because it's not theirs. And that's important to make sure the community is, you know gets the ownership of the project.*

*#: And ask them. You know, what do you think about this? What do you think if we do this? Would we agree? Would you like it? Do you think that we have some other idea? You know, things like that help a lot in that phase. And actually you know, they have their knowledge. Talk to them and it's very interesting. They have very good ideas.*

*#: The sense of community work in Bolivia is very strong. And that's very particular in this country. Like if you don't work for your community then they fine you. Or do they all kinds of stuff to you. So a lot of communities are really hard working. And they move stones very, very fast. And they do work hard.*

*#: Really hard.*

*#: But that sense of ownership and making sure that everyone's okay is important.*

\* \* \*

*J: You mentioned education earlier. But you mentioned it in the sense of helping with education in the developing region, do you think it goes the other way also?*

*#: It probably should.*

*J: A question that you asked that I've thought about almost every single day since Chivirapi, is "what are we learning from them, and what can we learn from them?" Have you thought about that?*

*#: Yeah, a little bit, not every day though.*

*J: (laughing) It's perhaps in my field a little more.*

*#: That is...no I haven't thought about that directly, but I suppose I should. But I do think we should be learning from them, about their culture and the more we learn about them, the better we can tell that whatever thing we think is the best for them, and the more likely it will be successful long term. And how do they go about education. I mean, we don't know anything really about the mechanics, how many days a year they go to, what their class sizes are like, that sort of thing.*

*J: Well and even outside of the institution.*

*#: Outside of the institution yeah, we have learned a little about them. We know that they have a water board, we know that they have some leadership council kind of thing that transfers every year. You know a lot more than I do because you did all of those interviews, and I haven't read all of the transcripts yet, and I hope to learn a bit more. We have learned about how hard-working they are and how they're motivated to help themselves. And they're building this system, we don't think it's going to work, but they're doing it. So I think we have learned things, I just haven't actually spent the time reflecting on what it is we've actually learned in total. But we should write those down as a group. We should do that, it's an exercise that I think would have a lot of value.*

*J: And do you think it would just have value for the project itself and its success? Or do you think there are other values that would come out of it as well?*

*#: I think it could help the transformational experience of people and what they do. And now that I'm talking about this. It's just, here I'm talking more of what we've learned about them, rather than learned from them, and there's a big difference there.*

*J: I think part of it would just be conversation. I don't think we had much of any conversation beyond an agenda.*

*#: That's true, but there's got to be some things we've learned from them, maybe learned about ourselves, maybe learned about the nature of people. I mean, I don't think I've learned anything about*

*hydraulics of hydrology from them. But there's more to Engineers Without Borders, and I'm thinking that the Engineering is the smallest part really.*

\* \* \*

**J:** *So did you learn anything from them?*

**#:** *I guess, I learned what they want. I learned a lot about the way their community is set up. I definitely did, I'd say learned a lot and I would say that's partially due to challenging the notions I had preconceived about, like what I was saying I didn't expect them to have electricity or T.V.s. I learned a lot from them as far as I was a lot, I don't want to say surprised, but excited to see that it's not this miserable group of people that's desperately asking us for water because they're all about to die. They're happy people. They enjoy their lives, but at the same time they can use this. So that was really nice to learn about them. And it's nice to realize that we're helping them with an engineering solution but we're not going to...it's not a life or death situation...it is in a way...but I'm glad that we're not responsible for their, their lives aren't hinging on whether we do this, basically. They're going to be okay, and we're going to be able to improve their quality of life and bring them a better quality of life over all, but even if we don't do that it's not like they're all going to be feeling miserable and dying.*

\* \* \*

**J:** *And when you say you learned from them, is it more that you learned about them as in analyzing them like a study, or did you learn something from them that is going to affect your life and change the way you behave?*

**#:** *Well, I think that I learned a lot from analyzing them obviously through the surveys that we did – just kind of a demographic overview. But I think also that I learned things about them that is going to affect my own life in the sense that I was just referring to – you don't need all of these things that we have to be happy. And that was probably one of the more profound things that I took away from it. I guess I also learned about, I don't know if this is necessarily something that falls into that category, but just the importance of education, and how valuable it is to have access to it. I never really realized how easy it is to forget in America, and how easy it is to take it for granted.*

**J:** *So, it sounds like what you've learned, the things you've learned from them are more of an appreciation for things in life, for things that you have, or that you don't need certain things?*

**#:** *Yeah, I guess I would say so.*

\* \* \*

*J: Do you feel like you learned anything from the trip, from the community?*

*#: I feel like people are similar. We get caught in cycles, cycles of being stuck in whatever system you're in. Whether it's expecting someone to come fix your water, or whatever it is, we get stuck and it is hard to think outside of whatever box we're in to break that cycle.*

### **Resource Efficiency**

Resource efficiency has been a point of contention amongst the team. No one advocated outright for the justification of expenses spent on the Chivirapi assessment trip and many excellent points have been raised for consideration with the preparation of future EWB-UI trips. However, there is a considerable amount of consideration that must be made in regards to the balance between student benefits and cost efficiency. First of all, the cost of flying students is exorbitant and potentially frivolous. The money spent on traveling also contributes to carbon emissions that impact global warming which consequently affect communities like Chivirapi. The possibility of sending students versus hiring local engineers is offset by the EWB model, and the perceived benefits of providing students with international learning experiences. The need to fundraise is also weighted by the incentive for student travel. Students could potentially lose interest in the entire project if there is not ample opportunity for travel. The types of arguments that are raised in this section are a microcosm of the debates over spending and efficiency throughout the international development discourse.

*J: That was actually leading into my next question. It does seem like we've squandered an incredible amount of money as far as the input goes, but I don't know what is the long term effect? And what is the worth? Say, if you come to the total at the end of \$50,000 for everything we've done, and all that came out of it was a small education program with a hope for progress, and covered wells, is that something that we can really...*

*#: I don't know how I'll feel if that's the case in the end, then I don't know how I'll feel about it. Maybe there's things we can do to make the whole thing more efficient. Did we really need to bring seven people down there? Do we really need to go back over and over again? Is there different ways to do the whole project while making it much more efficient? Another thing that's related to it is, you know is there climate change? Afnan had said there were places in Bolivia that relied on springs, and their springs are drying up. And we're flying down there and contributing to climate change, I think about this on a daily basis in everything I do, about burning fuel and how I burn fuel myself, but that*

*indirectly affects them and many more people like it. So you think about all of the EWB chapters and all of the people in the world doing development projects, and flying all over to talk about development projects, and adding all of that up and okay, what's the impact – indirect impact of all that activity? Of all these people trying to do good... I think this a lot with academics. You see people that deal with climate change a lot, they fly all over the country to conferences just to talk about that with people about these little nuances and little things about it, and it's like really? That doesn't really seem like you're putting your money where your mouth is – I mean should you be getting on that plane or should you just forego going to the conference? And there's professional obligations that people have to, and that's one of the driving factors.*

*J: Yeah, and well kind of a long that line, do you find a conflict between efficiency as in, is it really worth having these students almost using a community of real human beings as a learning ground, where we could spend that same \$12,000 to hire three people who know what they're doing and have them take care of it?*

*#: I see that very much so. In fact as an advisor to this group I'm taking that pretty seriously to make sure people aren't going just to travel and play, and that they are interested in doing good work. And I think we've never talked about this as a group, but we should really talk about how the people who are involved in EWB are going to behave as professionals, what kind of work are we going to, are we influencing people to do positive work in the future or is it just a resume builder? We've talked about the resume builder, but not necessarily about the type of person that goes out of EWB, whether they do anything with that later on, or is it just a little stepping stone along the way? I mean, are these the type of people that can be changed during their daily behavior and think about these bigger picture things. But yeah, I mean should we hire people just to do it? Should we hire people in country and benefit that country? Maybe we should just be fundraising and giving the money to EIA, and EIA hires people in country, and that benefits their country economically, as well as not influencing the country nearly as much as we would. There's much more benefit I think to that than having a bunch of students go down. I mean unemployment in Bolivia is huge. I mean \$12,000 we could have probably paid 6 or 8 people for a year to do stuff there.*

*J: Who speak Spanish.*

*#: Who speak Spanish.*

*J: There are engineering students down there.*

*#: Sure. But selling that...we wouldn't be able to raise the funds to do that on the other hand, right? It would be much harder I think to raise those funds for us, because which student is going to be*

*motivated just to do fundraising? I mean that is a motivational factor for people is to be able to go on these and see them for themselves and actually do some hands-on work, rather than just doing some fundraising.*

\* \* \*

**J:** *Why do you say that?*

**#:** *Because the engineering is easy, and that's not the hard part about this. The hard part about it is doing something that will fit. That they can financially support. That they can support with their level of education that they have or we give them, that they can support the number of people that they have with how they want to grow into the future. All of those things are only peripheral engineering. We think about that as engineers here, you know, look at the need and that sort of thing and the finances are always important. But if we have \$12,000 we could have, that's almost enough to get a drill rig up there. Afnan said it's \$15,000 to get a drill rig up there. Then on top of that you've got drilling costs, but that by itself that's the engineering. We could have spent that money on engineering rather than just getting us there.*

**J:** *Can it be engineered from here and then just pay somebody else to go do it?*

**#:** *Yeah, I think a lot of it could. I don't think EWB USA would like that approach. But we should think about doing that sort of thing. Rather than have another group of six students to go down there to help build something is to have two students go down there, or one student, and oversee or help with the oversight of a bunch of Bolivian people that are doing this.*

\* \* \*

**J:** *Well let's think about it. So we used \$12,000 for the assessment trip. Would it not be more beneficial to have a project lead who's supposed to manage and administer, and maybe even one more student who can help keep things in the checks and balances, go down and hire Bolivian engineers and Bolivian anthropologists, just two of them, and do the project for half the cost for the exact same work?*

**#:** *I think this is also, I mean, as much as we're trying to help them, it's also a really beneficial thing for the students who are involved in it as well. So I don't think we should overlook that aspect, that the people who are actually helping with development, they're getting a huge...I'm getting a huge value out of this personally. I'm really glad that I'm involved in it, and I'm really glad I can be down there and experience this completely different culture, being able to be down there and engineer a real world solution. But I think that again in that case, I like the fact that there are so many people*

*involved from America, and that so many of us got to go down there and experience it first-hand. Because if we just hired...it enhances the personal connection to the community and enhances our drive to fundraise and that sort of thing by going down there and doing it personally. And it enables us to do quality control. If we were, I don't want to say that we couldn't trust them. But it's nice to be able to create the solution that we think will work with our own hands. And then go down there and have the help of these others like Engineers in Action. Clearly Engineers in Action is a really small non-profit, and it helps to have us because they need to have these other sources of labor and they need...because they help us when we're down there and they're a huge help. They have a ton of information, but we're the ones who are actually creating the solution with the data that we've received. And I don't think they have necessarily the resources or the labor with time to do that for every community.*

**J:** *Could it not potentially cause a conflict of interest though if we're talking about these students and Americans getting to have their experience and build their perspective, getting to design their project? Because it sounds like we're not talking about the community so much anymore?*

**#:** *Well I was just trying to emphasize that that is also an aspect of it. I wouldn't say that that's the whole thing, and especially I'm really glad you're involved because you're really good at pulling it back to what is most important to the community. I think that in a lot of Engineers Without Borders projects it becomes more about the student experience and the student solution than the actual community needs. But I think that so far we've done a really good job of integrating the two.*

**J:** *So it is a potential danger of development work like this. Are there ways we can help regulate that, where we're not wasting cost on self-serving projects?*

**#:** *Well, I think that one of the main things is going around to the community and asking what they want, which is exactly what we did. So it's just making sure that we're taking that into account. I don't think that anyone goes into a development project thinking what's best for me from this community. I think that it's just something that can get overlooked when you have this idea that you know better, and that you can do better than anything that they can. I think that if you have people in place who have that mentality then there's nothing you can really do to combat that, but if you start out with a humble mentality of thinking I want to help them with what I know, and I want them to help me with what they know, and together we can come up with a solution for this, then you're going to be a lot better off.*

**J:** *And do you think that a mentality of superiority is common in development?*

**#:** *Yes, I would say so. When you come from America where you have running water, running toilets.*



*And then you go somewhere they don't have toilets, they go to the bathroom behind a shed, and you're like, Oh that's so primitive, we're clearly superior to them. I think that's really easy to fall into.*

\* \* \*

*#: For fifty thousand dollars you can have three hundred people have clean water that they don't have. Fifty thousand dollars here...that's a fucking kitchen remodel.*

*#: Yeah*

*#: You buy a six burner wolf range, some tile floors, and some hardwood and that's fifty thousand dollars.*

\* \* \*

*#: Yeah I mean it's, I don't know, it's just one of those things. There's a responsibility to our donors. And part of it is not creating expectations that are unreal anywhere. Whether it's in our donors, whether it's in our community, no matter what, but transparency is a huge part of that – financial transparency. You know, because you hear these people, but also the model that we're in is actually pretty nice. Because we are small. We don't incur, you know the idea is that we don't incur a ton of administrative costs. You know, so you can still see even as organization, think about the things that don't go to the community from this trip that we collect. So pretty much the major of what EIA, what we've paid to EIA, it's either gas to get up to the community, it's food in the community. You know things like that. We are paying Afnan's salary, but he's going to be our translator, he's going to be a facilitator. That, that's going directly to help the community. You know, we've got the money that's going to IPO. That's...*

*J: IPO?*

*#: International Program's Office. It's an unfortunate expense that I don't...*

*J: Oh, it's part of the university...*

*#: It's part of the university's... basically they give us a 15 minute presentation and shake a stick at us and charge us \$600. Which the question is, are we providing the...and you know it's the, in some ways, the cost of doing business, which sucks but you have to weigh the benefits and the rewards. And at this point at time, the jury's still out in my mind on that because does the EWB name do so much for us, or so much for the university? Obviously it got us \$10,000 in the beginning.*

*J: Or does it do so much for the EWB?*

*#: That's the other question. So, as a group, if we were to get the same group of people together and fundraise under The Generic Freedom Fighters, would we have any less success without our EWB logo? We have a collected and great wealth of information under the EWB guise which is getting better and better. And now that they've started doing things like sample designs to different documents. Now we have the grant cycle. That was six thousand dollars this period that went into the community that we would not have collected without Engineers Without Borders Corporate. So, if you offset that, or excuse me five thousand dollars. If you offset that, you say the five thousand dollars we got from grants, the five hundred dollars we pay for QA QC, well that's a win.*

*J: QA QC?*

*#: Uh, Quality Assurance, Quality Control. So that's the technical advisory committee, the administrative approval.*

*J: That's the conference call we had?*

*#: Yep. All the stuff they do to basically vet our project for...*

*J: How much does that cost?*

*#: Five hundred dollars for assessment, One thousand dollars for implementation, and five hundred dollars for the check-up.*

*J: Why doesn't EWB use part of their pool of grant money...*

*#: They do. The actual cost, and I haven't seen the numbers which is something I'd very much like to see. EWB evaluate their part of the quality control quality assurance at two thousand dollars for an assessment trip.*

*J: And we're paying five hundred dollars?*

*#: We're paying five hundred. So they take fifteen hundred from their pool.*

*J: Is this something you've been weary of ever since you've been in it? Checking the numbers and seeing if you truly believe in Engineers Without Borders as an organization?*

*#: It's a conversation that's been had before, at the beginning. It's a conversation that's been constantly being renewed. And I think it's a conversation that's always going to have to be had. Because you have to weigh the benefits and the risks, and that's not a one-time occurrence. You know that's a constant thing. What benefits are we providing the community? What benefits are we providing the donors by doing this under the EWB name? And what are the costs of said EWB name?*

*J: Final picture, we raise fifty thousand dollars and give two hundred people clean water for how long? How much does it affect their lives? Do we even have models to base this off, to see if this will be a successful project? Or are we just hoping?*

*#: Well that's what this trip is going to be. I mean, we have to find a way to measure success. Because if we can't measure the success of this, of this water system. Well you know, why are we doing this? We know why we're doing this, now we have to see if it works. If we can't figure out if it works, then we may not have helped them at all. Just because we put money into infrastructure within their sphere of influence doesn't mean it's a successful project.*

\* \* \*

*#: No, because I feel like for me to say that I am responsible is to say that they have no other choices. And I want to believe that people are intelligent and can solve their own problems. They just sometimes have to really want to. But I also don't like the idea of feeling like I've abandoned people to the plight that they're in, and so somehow working, not just abandoning completely and saying "well you should really just figure out your own problems on your own." Finding ways to not go in and do things for people, not go in and dig wells for people, build bridges and roads for people, but to find people who actually have a desire for a change, and give them the tools to go in. Like, my...I feel a little bit sick when we talk about the cost it takes to send us, to send our group of eager helpers over to another country. Could we not spend \$26,000 on some motivated person who's already in the country, is there not some more effective way? Could we not send one of the people who is in the community to school so they could build their own system? That's a lot of money that we're going to spending over years and years.*

*J: That's a great question. How much money did we spend on the assessment trip?*

*#: I don't remember, I just know that \$26,000 was thrown out today as an estimate for this next trip.*

*J: So we spent \$12,000 on the assessment trip.*

*#: Yeah.*

*J: And some of it was wasteful, right? And did we produce any amount of work that was worth \$12,000 in your opinion?*

*#: I don't think that we're done. I think we still have an option of whether that was a useful \$12,000 or not. Because the point of our trip was to gather information. The point of our trip wasn't to go build something or do something, it was to gather information. We didn't gather quite the information that we were expecting to gather...*

\* \* \*

*#: I think that it, or maybe just in another aspect, I think that we could partner with them and work alongside them, and that could be useful. But the money that we spend to get there to work alongside them could just as easily be put toward a bigger project and someone locally could come and be alongside them. I think it might be more effective to partner with an organization that's already there, and send money to them. I just...I don't know – I don't know how to balance a desire to help but also wanting that help to be as effective as possible.*

*J: Yeah, efficiency. Because our trip – was it efficient?*

*#: (nervous laughter)...*

*J: Would you have paid someone \$12,000 to gather the information that we gathered?*

*#: No. (laughs) no.*

\* \* \*

*J: So then do you feel like you were effective? That the trip was worth your time, or did anyone else talk about anything like that? What did you find to be the general sentiment? Or how do you reflect upon all of this? You don't have to answer all of these, but that line of thinking of your reflection upon your time spent there, was it worthwhile, was it efficient, was the money efficient?*

*#: I felt like there was a little bit of a feeling of frustration and discouragement overall.*

*J: Why do you think it was discouraging?*

*#: I think that people wanted a little bit more of an action plan, or more of a feeling of purpose. And it was hard to find that. I think the little pieces of that we found, we jumped on, but like Eloy's kid being sick we were determined to go to the doctor, when there was something we felt we could help with or fix we wanted to do that. But a lot of it was just...*

## **Education**

Education is brought up consistently in team interviews and community surveys as a necessary function for successful development, healthy communities, and sustainable projects. It also seems that the team members unanimously agree on the nature of this topic. The team members agree that Bolivia has a poor education system, especially in rural areas. The lack of a basic education system is thought to cripple progress in communities such as Chivirapi. Education is sought after by

everyone involved, from the community members, to the team members. However, it seems that there are different ideals for what education should provide. The community surveys showed overwhelming support from the parents of households in Chivirapi who send their children to school despite the financial burdens that are associated with this investment. However, the community members noted that they believe education will provide their children with opportunities for employment foremost, and subsequently a better understanding of the world. The team members, on the other hand, tended to view education as a necessary function for a successful and developed society, which may include employment opportunities, but also focuses on health and infrastructure. As an immediate goal within the grasp of the EWB team, specific types of education regarding hydrology, sanitation, and engineering are thought to be necessary for the implementation of a successful project.

*J: Education keeps getting brought up. Why is that? Why education, why is this such a big deal?*

*#: Well, when I think about education, I'm thinking specifically of educating around water and sanitation for their health. I mean education that's health related. Not general education like Aristotle and Plato or whatever, or to be engineers or anthropologists. I'm specifically thinking about education that's related to how things affect their health and well-being. And you know this goes back to that soccer thing, to well-being beyond even their physical health. Mental health and well-being should be a part of that too. Lord knows I'm not qualified to do that part, but that's something we should also think about too. And that's a narrow range of education. I'm not talking about a general education, learning to read and write – although that would help probably. It's much more specific to educating about the things we're doing. For sustainability, right? Because if they don't know about it then they're not going to be able to work at it. There's that failed NGO project right there in town. They don't have the knowledge, they don't have the money to fix it.*

\* \* \*

*#: I don't necessarily think that they always do, but a lot of the time, a large part of it is if you have a lack of education you may not realize that. And so you don't realize the opportunities that are available. So I think that it's bringing the know-how, or helping to, in an ideal situation I think it would be empowering the people to do things on their own by teaching them what they are capable of.*

*J: Does that imply that they are lacking, within those abilities?*

*#: Not lacking ability, just lacking knowledge?*

*J: But specific kinds of knowledge?*

*#: Yes, not general...they're not stupid. They just, I don't know, I don't think that people in impoverished communities are necessarily going to have access to educational engineering textbooks that let them know how many things they can actually do.*

*J: I see. So what it sounds like is what we're talking about is a specific type of knowledge, a specific type of information that people from other countries, as you said, may have access to, may have technical expertise, resources, or technology and they come to impoverished countries that don't necessarily have that specialization to assist with purveying that specific type of information. Why is it necessary though, why do they need that specific type of knowledge? Why do they need to know to work with engineering textbooks?*

*#: I think because there are really, engineering as an idea gets overcomplicated, but the way it started is they are really simple solutions to basic human problems that are easy to implement with a technical know-how. And that's the sort of thing that it can bring, outside aid, outside knowledge.*

\* \* \*

*J: And when you talk about education, you're talking about what type of education?*

*#: Well in that aspect I was talking about in terms of an actual classroom education.*

*J: Like core curriculum, maths and sciences?*

*#: Mmhhh (yes), and just allowing them the opportunity to have full access to that. I think that also in terms of, I think that a lot of the people, when looking at the one, or the biggest education that we're able to help the with, or able to share with them is the chloroform that we had incubated. I think that shows there is a lack of education in terms of their water, why it's good or bad, what actually makes it clean, and what makes it unclean, and why it's making them sick. We think that by letting them know we're giving them an education about hygiene and things like that – which would come with math and science if they were able to have full access to it. That would improve their quality of life as well.*

*J: But you said Engineers Without Borders isn't responsible for that kind of education, who's responsible for that?*

*#: I wasn't really looking at it in terms of responsibility, but the people who would be most capable of carrying it out would probably be Bolivar or the Bolivian government. Somewhere in between there.*

*J: And if the Bolivian government in Bolivar failed to educate the community, are the efforts taken by the NGO to improve water quality and things like that, do they become a waste? Or are they still useful?*

*#: I think they're still useful. And I think that educating them about hygiene, although we're not able to create a school system for them, I think we can educate them about hygiene. And I think that's part of our project, and an important part of getting them involved in the project as well. Instead of being like, Oh this is clean because we say so, and therefore you can drink it. To help them understand why it is.*

\* \* \*

*J: How can we change that?*

*#: Ask government people. I cannot say that. Probably with a better education. I think it's very important to have a very smart, and a person who has a goal, and also a professional person in the presidency. Because our president didn't finish school.*

*J: Evo Morales didn't finish school?*

*#: Didn't finish school. He said he would finish it when he got president.*

*J: Like he didn't finish university or he didn't finish basic school?*

*#: Basic school. He was just a revolutionary and he took the power<sup>20</sup>. And he also say he would finish university when he is president. But it's easy, no? You go to a university and you get a title. So I can give you a machine for that, so you give me the title. So now you can go to the people and say now I have my title degree, I'm a professional. But we know if he go to school, he have like 3 PhDs I think.*

*J: So what was his job before he was president?*

*#: He was a farmer in Oururo<sup>21</sup>.*

\* \* \*

*J: You said if you were president you would start by changing the base.*

*#: Yeah.*

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<sup>20</sup> Benjamin Kohl's "Challenges to Neoliberal Hegemony in Bolivia" documents the uneven course of neoliberal hegemony, beginning with the 1980s structural adjustment programs to recent popular uprisings. Evo Morales, mentioned here, was an indigenous revolutionary who overthrew the longstanding political alignments in Bolivia from the old Colonial style dominance.

<sup>21</sup> The book *Peasants, Entrepreneurs, and Social Change* discusses how the cultivation of sugar cane and the growth of commerce led to demographic changes in Bolivia, and a reorganization of social classes. This was because following the 1952 Bolivian revolution technology and resources were channeled to regional elites for large-scale cash crop agriculture in the lowland frontier. This coincides with this respondent saying the previous job of the president was as a farmer; this not necessarily meaning 'lower class' as some in the Western world may infer. In fact President Morales gained considerable power from supporters as a coca grower.

*J: What are those things? What is the base?*

*#: Well the base for everything for me is education.*

*J: Why is that?*

*#: Well as you can see in this part of the country they don't have education. So if you don't have education you have problems. And if you have problems, the problems will be bigger and bigger and bigger. And that problems will be for the next generation, and for the next generation. So if you give them the knowledge and the education. The people who now is young, they are going to transmit that knowledge to young generations. And they will have success, and there will be more expectations, you have more goals.*

\* \* \*

*J: So what you're talking about is, people find the specific education they need, but one of the causes is a lack of a general education?*

*#: I feel like I don't know what the effects of having a basic education in general would be. Like, I appreciate the American education that I've got, and that probably in a lot of ways skews my perception of how useful education is.*

*J: So even though people say education is a positive is it actually a cause or a problem?*

*#: I don't know. I think there are specific items of education that are important, like understanding exactly what it is in the water that is a problem. It was a good thing to learn if you're focusing on the water they're using's quality, or basic needs. The only reason you need to know exactly what's harming you is if you're going to do something specific to change that. Otherwise all you need to know is don't drink the river water. I guess in order to create bigger change more education is necessary.*

### **Conflict Over Purpose**

Perhaps one of the more difficult topics for each team member to handle in their own manner is the conflict over whether the team should be working with Chivirapi at all. The primary subjects of consternation were resource inefficiencies, sustainability, cultural assimilation, and psychological manipulation. The issues with resource inefficiencies have been presented previously, and are closely tied to many of the concerns team members possess. Project sustainability is a large issue as well, that brings up questions of whether it is truly beneficial for an outside entity to be involved in this work in



the first place. Also, by introducing new technology and information there is potential pressure that is forced upon the community to comply with the new requirements – such as buying soap, or maintaining the equipment. Lastly, some of the team noticed that there seemed to be a sense of disillusionment amongst villagers who have witnessed previous engineering efforts fail. This psychological pressure that is introduced with efforts such as these can be unexpected yet detrimental to the collective consciousness of the community. Likewise, there are concerns of incidentally introducing a concept of reliance or expectation on outside entities for charity and service. These issues and more are incredibly challenging for the team to address, however are ultimately beneficial because it shows that the group is actively considering the impact of their work in order to optimize the benefits of their effort.

Clare Holdsworth's paper on student's motivations to volunteer raises some interesting questions when I relate it to my experience with the team. She uses a volunteer project within English Higher Education as an example of a program that has seen enhancement in recent years through a rise in service initiatives. The higher learning institute in her case study recognized the contribution of volunteering can to students' employability. There is emergent interest, says Holdsworth, in understanding the conditions of student volunteering - in particular why students volunteer and what they seek to achieve through their involvement. Her research is both qualitative and quantitative, as she tries to produce a "detailed interrogation of motivations and how students make sense of their own experiences with respect to dominant discourses about what volunteering can achieve."<sup>22</sup> She argues that if students are reflective about why they volunteer, their motives can change over time, and volunteering can potentially transform from being part of a strategic goal to enhance CVs or 'do good' to something else.

With such a wealth of emerging literature on motivations and purpose of volunteers, and with the rise of perceived (and real) reasons to volunteer, it is no wonder I encountered confusion - even in some cases guilt - over the purpose of the service initiative. "I've thought about this back and forth," one of the volunteers told me, "about whether we should be doing this at all, whether there's a net benefit..."

*J: But at the same time, if we implement an idea of washing hands with soap, of maintaining a water system that requires a financial investment, by buying the soap and having a financial investment for*

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<sup>22</sup> Holdsworth, Clare, "WHY VOLUNTEER? UNDERSTANDING MOTIVATIONS FOR STUDENT VOLUNTEERING." *British Journal of Educational Studies*, 58:4 (December 2010): 421-437.

*maintenance – does that not influence... put some pressure on an economic need?*

*#: Absolutely.*

*J: And then perhaps they do have to work more in the cities<sup>23</sup>...*

*#: Yeah, yeah, it does...there's, and I do wrestle with that, whether we should do anything. And you see people suffering, and hurting, and there are some simple things that they could do, some of those things might not even cost any money. So when we have our decision matrix and trying to choose and evaluate one project over another, I think we should really evaluate that particular issue – how much of a financial commitment does it make to them, how much will that impact how they live their lives. So, putting a fence around a well with a cover on top might not change much of anything. You know, they can use scrap materials for that sort of thing. It seemed like they had that sort of thing. But putting electric pumps in and things like that is a whole different level. It requires a different level of commitment. Now, maybe they want to develop to Western standards too, I mean they're taking advantage of electricity, so it's hard to say what people want. They see the way we live and think probably, that's "I would like to live like that".*

*J: They do have television. So then are they truly in isolation as a culture anyway?*

*#: Not anymore. They're not truly in isolation.*

\* \* \*

*J: This is something Big Dog and I were discussing. He was wrestling with...I was explaining to him the way I view the systems at play with globalization and Westernization really, and development, and when I was explaining that I see cultures being put into a cross hair, where they basically resist change or adapt, but either way they're being pressured by outside forces. Then he said, how do you justify being involved in this at all if you know that you're purposefully changing a culture? How do we be involved in development knowing that?*

*#: Yeah, like I said, I'm conflicted about that particular thing. I mean, I've thought about this back and forth, about whether we should be doing this at all, whether there's a net benefit, whether the people want their culture changed or not. I don't think we, maybe you got some answers out of that, but the*

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<sup>23</sup> The chapter in Engineering in Development entitled *Transport in Development* discusses solutions to transportation problems in developing communities. It “focuses on small-scale interventions to improve infrastructure, vehicles and optimize travel behaviors”. This is an important consideration; I spoke to a local who left at 4:00 AM to catch a bus headed to the city to pick up laborers, driving 80 km so he could make enough money to buy his daughter medicine. Without vehicles, villagers still find a way as their subsistence and families rely on it. Thus even if a project focuses on one aspect of a community, i.e. potable water, transport issues need to be considered if not addressed.

*cultures that resist it's usually probably the elders that resist more than the younger people, and the younger people like the flash and things. And maybe that's just a natural progression. I don't know. I'm conflicted. I have both of those feelings right now. More than just that too, I look at how hugely inefficient we are at doing this. We've spent \$12,000 just going there one time to, and we didn't really get much done. I mean what if we were to just give them \$12,000? What could they do with \$12,000? Maybe buy a lot of coke a cola, I don't know. Or waste it away on television and stereos. But they could, with \$12,000 just there spent on a water system could do a ton.*

**J:** *Yeah, I mean multiply that by 7 and put that into a trust fund.*

**#:** *Mmhmm.*

\* \* \*

**J:** *So then do you think we still have a role as Engineers Without Borders in that community then?*

**#:** *I think there's definitely, I think so, by helping this. I mean, I think they have other problems besides clean water that could be addressed, and not necessarily by us, and not necessarily by an outside source. But by bringing them clean water that's definitely something that that, when we were asking them questions that was something that they saw as really important to their lives. But that's, I think especially, partially due to the fact that there have been so many other development projects trying to address the exact same problem that have failed I think that they weren't as excited as they would have been if we were the first group who had been there and talked to them about this. But I think that even taking that in to mind they were still very enthusiastic about our project to do this.*

**J:** *But you think there was a bit of a mentality of disillusionment from the past?*

**#:** *Mmhmm (yes). And I think that there was definitely, especially in a couple of the older people that we talked to there specifically. I don't know if you talked to Freulan but he was, he was the one with the hump. He basically had adopted a bunch of his brother's and neighbor's children as his own and was kind of taking care of them. And he obviously cared a lot about the community to do that, even with David who wasn't related to him at all. He kind of took him under his wing and would help him out as well. And he definitely was the one who was the most unwilling to be excited about it, because he had been there the whole time as he watched the other ones fail. And he, it seemed to me like he knew what the importance of it was, of clean water. And because he had watched these other projects fail he just didn't want to get excited about it.*

**J:** *Kind of protecting himself almost, not getting excited?*

**#:** *Yeah.*

\* \* \*

*J: So what if we don't build a water system?*

*#: Well I'm assuming that we're going to build something that's suited to their needs. So if it's not a water system then I don't know what it would be. That's something that everyone kind of ... The main things we heard were clean water and irrigation. So those are both water systems...*

*J: Mmhmm, but they didn't want to pay money beyond 50 centavos a month, right?*

*#: Mmhmm.*

*J: So if it's not engineeringly feasible to build a water system, then what? If they don't have any money to maintain it...*

*#: Well there's other options. I would like to think, there's ways to build things that require almost no money to maintain, or we could even help them build wells. I would like to think optimistically that we're not just going to say, oh they don't have enough money for this perfect project that we want to do, so I guess we're just not going back there, next project.*

*J: But if we don't do something like that, and it is just something like fortifying wells, or maybe digging deeper wells, is it worth the tens of thousands of dollars invested in students just to go down there and dig some holes?*

*#: That's a problem I see with international development as a whole. Is that, if the ideal situation would be just to give the people already there the information to do this sort of thing themselves. But because we've already made a commitment to this community, I think that it would be worth it to do it. And I don't think that...It's not that it's necessarily worth it, it's more worth it than not doing it I guess. Because I think it's a terrible idea to say, oh this isn't necessarily a feasible idea so we're just not going to go back there. I think we made a commitment to this community and the way that Engineers Without Borders is designed is that we're not just going to be solving this one problem, and so when we go down there we could be digging wells but we could also be helping set up an irrigation system, or interviewing them about another need that we think they have that we could help them with in terms of engineering. So I think that it's worth it.*

\* \* \*

*J: Can you see any potential drawbacks of having an outside entity be the one that helps build those things?*

*#: I think yes. But I think that it can be done in a way to kind of minimize those. I think that some of*

*the drawbacks to those...well I think that the way the project has been constructed so far show some of the drawbacks to that. An outside entity came in, both cases, and tried to install a water system both times, it failed for one reason or another. Now it doesn't work. They had no way of knowing how to fix it. They didn't know who to contact. And they became disillusioned with the idea of outside help at all.*

**J:** *Would it be better though if the water system or whatever infrastructure you build came from within, rather than externally?*

**#:** *Well, I don't think so in this case because I don't think that they currently have access to the technical knowledge to build an effective one, and I think that they're trying to build right now, I mean they're building it with their own hands, but it's Bolivar that's funding it. The way that they're constructing it, from what Big Dog was saying, I didn't actually see it, but he was saying that it's not going to be able to hold up past a year because of the way that it's set up. So I think that, they should definitely have a large hand in it, and I think that it's good that they are the ones who are building it so that they have ownership of it. But I don't think that it's going to work. So I don't think that something coming from just them, also I don't think that they have...because the municipality is helping them, I don't think they have the money to do it on their own.*

**J:** *And so the collaboration is not only a good thing, but potentially necessary. But it's important that it's done carefully otherwise it could potentially fail?*

**#:** *Yes.*

**J:** *Is that where we're going with that?*

**#:** *Yes.*

**J:** *Is there a potential problem with focusing on just one community rather than all of the communities. Does it really do much good to help one community of 24 households? Does that really make a difference? Is that really worth the money invested?*

**#:** *I think that, I'm always going to think that it's worth it because I'm involved in it, and I've seen it, I've met the people. I personally think it's worth it to help these 24 communities. But as far as an overall look at whether helping this community is going to help everyone else around them, in a sense no. In a sense yes as well. No because obviously they're not going to have the engineers there working and building, and obviously our group isn't going to be able to take on all of these different projects, but I know that in a lot of Engineers Without Borders projects the way that a lot of...because they only take on projects of people who ask for help, and the way that a lot of these communities know to specifically ask for Engineers Without Borders for help is because there have been other Engineers*

*Without Borders groups helping in the local community and they kind of heard about this and saw it as a viable option for them to be able to get assistance. And so yes in that sense, and also yes in that I think by...it's hard to say with Chivirapi specifically because it's so isolated but I think that if this solution is something that could be implemented it's not a huge cost to the community. Bolivar obviously is going to help give us funds and so they are going to reinvest in making this happen and I think that if they kind of realize that this isn't something that is a huge amount of work to undertake if the engineering is done right, they might be able to send in Bolivian engineers who can help with this sort of thing.*

*J: So then it's possible that this could help present a model that could be used by the municipality using Bolivian labor, paying Bolivian labor, helping Bolivian communities and essentially not need outside entities anymore?*

*#: Yes.*

*J: Would that be preferable?*

*#: Yes I think so, but again there's also only if they're going to be taking this as a model in the sense that, oh this works here let's take this everywhere else and then it won't be effective. Because then they'll be disillusioned by it failing in all of these other places. Because obviously we created it specifically for Chivirapi, specifically for the way that the community is designed agriculturally. But I think that if it were able to be done effectively then that would be preferable because it's obviously way cheaper for them to have Bolivians to be doing this in Bolivia, than to have us flying down there once a year at a cost of thousands of dollars each, just for a plane ticket alone.*

*J: Well then would it be more useful to train or organize a team of Bolivian engineering students and create more EWB chapters in country, and just partner with them as a sister community and help fundraise for them or something and have them do it?*

*#: I guess in a way it would be. But at the same time it's really hard to do quality control if you're never there. It's really hard to ensure that things are done the right way if you're not actually visiting the community. And also, I think it's really hard to, and part of the reason that I think Engineers Without Borders is so cool is because we go down there, and we talk to them in person, it gives you such an intense connection to this community and that will spur on fundraising efforts more than just throwing money at them, cause I mean if we wanted to just help out a group of people in another country we could just fundraise and send the money out to any charity that works abroad.*

*J: Would that be more effective?*

*#: I like it our way (laughs). I guess in a sense, but I really like the fact that we have a chance to use our technical knowledge even though that's not even the most, I wouldn't say that our technical knowledge is the most useful thing that we bring. That's what differentiates us from other groups, but that's not the main thing that's going to get us, er... I'm trying to phrase this in a way...Our technical knowledge is important, but what we're actually using of what we've learned is a tiny subset. And engineering wise, we've said several times as far as an engineering solution is concerned, it's not that complicated.*

\* \* \*

*J: So, if we don't know why we're bringing them up to Western standards, and we're not sure if we're really helping, then should development even keep going? If the motivation was the people in power, does that mean you're just helping people in power?*

*#: ... (really long pause) I don't know. I think that I have an expectation for people to look for a way to solve their problems and to want to make their life better if they can – whatever better means for them. And so, I have a hard time understanding why a community like Chivirapi wouldn't be motivated on their own, to improve their standards of living since they live right next to Bolivar. If that was what they wanted. Or have we taught people to expect things that someone else comes in and does the work? Like, are we, and maybe I have it wrong, then. That's based on the expectation that people will work to better their situation if they want to.*

*J: If that is the mentality are we not doing exactly that?*

*#: What do you mean?*

*J: Like, if the mentality is an expectation that they don't have to do these things for themselves because people will come in and provide these things for them, then are we not doing exactly that?*

*#: Yeah, true.*

*J: So is that really beneficial?*

*#: But at what point...to some extent there have been promises made and they have an expectation for a reason. And so are we responsible for that? Have we made ourselves responsible for their situation?*

*J: That's a good question.*

*#: That's what I'm asking.*

*J: So let's play a hypothetical. What if you have – what if you've made a commitment to something*

*that you feel is irresponsible now? Do you feel like you're responsible for 24 households, that they depend on you for their quality of life?*

*#: No, because I still want to believe that people are intelligent.*

*J: And if they did feel like you were responsible then they wouldn't be intelligent?*

*#: No, because I feel like for me to say that I am responsible is to say that they have no other choices. And I want to believe that people are intelligent and can solve their own problems. They just sometimes have to really want to. But I also don't like the idea of feeling like I've abandoned people to the plight that they're in, and so somehow working, not just abandoning completely and saying "well you should really just figure out your own problems on your own." Finding ways to not go in and do things for people, not go in and dig wells for people, build bridges and roads for people, but to find people who actually have a desire for a change, and give them the tools to go in. Like, my...I feel a little bit sick when we talk about the cost it takes to send us, to send our group of eager helpers over to another country. Could we not spend \$26,000 on some motivated person who's already in the country, is there not some more effective way? Could we not send one of the people who is in the community to school so they could build their own system? That's a lot of money that we're going to spending over years and years.*

### **Transformational Experience**

There was no evidence of any dramatic transformational experiences immediately following the Assessment Trip. Some team members also reported that they barely spent any time contemplating what they had experienced, while others admitted that it entered and influenced their thoughts significantly. However, most team members did report some form of reflection and appreciation coming from the experience. A potential pattern that may be represented here is that team members who had more direct social interaction with the community were more positively influenced, at least in terms of appreciation and reflection.

*J: Right, and something that I'm conflicted on and would like to hear your opinion on about that is...on one hand, yeah, we could just hire people who already know what they're doing, on the other hand we could hire people in Bolivia, and I think there are huge payoffs and benefits to both of those, but is there also a benefit to having students from the United States who maybe never would have even considered things like this, to gain a world perspective, and to gain a perspective on development, as*



*well as poverty, and social issues, and practical applications for engineering that is beyond a paycheck?*

*#: Yeah, and that's what I was saying before, I do think there are people who can benefit from that, but there's also people that won't benefit from that.*

*J: And this is about picking people that choose to benefit from it?*

*#: That's right this is about people who choose to benefit from it, who will do something with it in the future, rather than just go about their lives the same exact way they always did. I mean, I hate this term, but the transformational experience thing...*

*J: Reverse culture shock?*

*#: So we do want, I think the benefit that is derived is when people actually do transform. Is anybody changing their behavior here? That would be an interesting study actually. Do a study on people who were involved with EWB before and after, are they changing their behavior at all? Are they driving less? Are they donating more to charity? Are they whatever, I don't know exactly what those measures would be, but that would be interesting to me to know.*

*J: And do you, your experience is just with Engineers Without Borders as far as this goes, but these same issues that we're talking about, do you think they apply to the larger whole as far as the development scheme?*

*#: I don't really know that. I mean, I haven't been involved with any development organizations or things like that, it's all second hand knowledge.*

*J: Is it not spoken of much in the Engineering...*

*#: Oh no, no, no. Our program here, we don't deal with that sort of development. It's all focused on in-country stuff. And development here is the same thing. It's economic development, right? We're doing these infrastructure projects and building developments, you know the cookie cutter houses and big box stores. It's pretty traditional.*

\* \* \*

*J: Well did you have any bit of a transformational experience from it?*

*#: Um, I don't really think so yet. I don't think I've changed anything that I've already been doing based on this. I mean, I might, I already give some money to charity, I might give some more money. There's a water charity that I give money to, and Amnesty International and things like that. I don't*

*know if I've been transformed by it yet at all.*

**J:** *What about reflecting upon it at all? Have you thought about it since you've been back?*

**#:** *Oh yeah, I think about it a lot actually. And mostly in the context of how lucky we are, and how easy I really have it. Actually, maybe it did transform my thought process a little bit. I'm supposed to be up for promotion to full professor this year, and I'm marginal because I haven't done that much research compared to others, and it's kind of a bizarre process that I don't really want to get into right now, but they really do evaluate everyone on research productivity regardless of your position description. So I have a heavy teaching load and I do service with ASCE and EWB, EWB takes a lot of my time actually. And it's not going to go away if I want to do a great job. And I've gotta spend a lot of time on it, I'm going to, regardless of getting any kind of kudos or not. But it's helping me not to really care if I don't do it, so I think what do I really need to do this for, why do I need that raise? I really don't care about the title. Thinking how lucky I am and my life compared to that, it's kind of taken away a little bit of that motivation that's been instilled upon me from day one to just succeed, succeed, succeed, you know, advance, advance, advance mindlessly. I had already been thinking that but it's now it adds on to that, that whole thing of I don't really need to do it. And it doesn't really bother me as much because of this.*

**J:** *Now is it just the luckiness that is making you feel that way, or does it have to do with some bit of understanding more about happiness, or more about....*

**#:** *Well that too. Lucky and being happy, and realizing that success is not the driving force between happiness, or to happiness.*

**J:** *So is that the goal then?*

**#:** *If I had spent a whole lot more time working then it wouldn't be that big of a deal, or I know what's going to happen is that my Chair and the Dean are going to say, "well you know, if you'd just do this and this and this over the course of the next year maybe you could be evaluated next year." Okay, I'll give up my next summer in order to do this. Maybe I'm not going to do that, I don't want to do that. I don't have that drive to succeed. I already see that I'm lucky in this, and I can spend my time doing something to me that's more rewarding. In my job right now, I'm mostly rewarded by two things. One is teaching, I really do like to teach. And I completely changed one of the ways I did one of my classes last semester and it was the best semester I've had in a really long time because of doing that, and trying something new...*

**J:** *What did you try?*

*#: I incorporated a whole bunch of concepts from cognitive psychology, and...*

*J: Oh this is what you were talking about...*

*#: Yeah, this mind, brain and education and neuroscience affects how we learn. So I was just teaching different. And the other thing is EWB. This is just, it is personally rewarding to me. I talked to my wife on the phone from down there. Afnan let me use his phone for just a minute and she said it sounded like I was talking to a kid. 'Cause it was, I like to, these not engineering things are pretty hard to grapple with and to incorporate in this and it's fun to try to do that, rather than just the nuts and bolts engineering which to me is kind of boring. I always found that kind of boring.*

*J: Maybe other students will be able to see this. So maybe that's part of the transformation then, maybe that's part of this whole development perspective. These kind of things. Focusing more on something that matters to you about life. And so it sounds like you're getting at happiness or luck. Is that what you view you should focus more on in life now?*

*#: Well that and also, I've always done things around the house with, even if I have the tool, even if I have the power tool to do it, if I can do it by hand I'll do it by hand. My neighbor has a rototiller and I can borrow the rototiller any time I want, but I turn my whole garden over by hand – just because I like to do that, and I think it's good to do physical things. So now I'm even more likely to do that. The more likeliness is because other people don't even have the opportunity to do this. I can do it. I'm physically capable of doing it, so why shouldn't I do that? It has less impact on the overall environment, so indirectly I'm impacting the world a little bit less.*

\* \* \*

*J: Has it actually affected you, and have you changed anything since you've been back? Have you thought about it?*

*#: I've thought about it a lot. I don't know that I've necessarily changed anything. I mean, I haven't bought anything since I've been back 'cause I don't really feel like I need anything else. Also, I guess in that sense I've gotten rid of a lot of things, but I don't necessarily know that that's necessarily...I can't really say that I've done anything in a huge lifestyle change. I guess I have in the sense that I have in that I've tried to go into my education with a greater appreciation for what it actually means that I'm able to go to class everyday and get an engineering education at a institution of learning that's, I don't know, I think U of I is really cool, such a quality institution of learning for almost no money to me and it's so easy. I live a block away. My life is ridiculously easy, so...*

*J: So just more of an appreciation for things?*

*#: Mmhmm.*

\* \* \*

*J: Has it affected your life in any way since you've been back?*

*#: I have been so busy I haven't even looked at my photos. I think I was expecting to be a little bit more excited about, that the trip would have more purpose than it did. I've been wondering how to be more... I don't know. This is the direction that I felt like I wanted to go with my life, but I don't know if it is.*

*J: And is that pretty difficult to start questioning whether this direction that you thought you had for your life is even a beneficial or good direction? You may not go in that direction anymore?*

*#: I think that the way that I approach it will be different, I don't know that the desire to help people or to...I don't know that the desire to help people will change, but it might shift from a bottom-up to a top-down perspective.*

*J: That's interesting, how so?*

*#: I'm just not sure how many water systems it's helpful to put in and not put in a water treatment plant above.*

*J: So is it necessarily useful to help one community with 24 homes that already seems to have some basic infrastructure, instead of helping a region?*

*#: Well it's not even the quantity, it's the larger city in the region is what's making it difficult for the other communities in the region. Their increase in pollution in the water makes it more difficult as well for the smaller communities to use the infrastructure. Or I feel like another topic of development is social justice. With social justice issues you can work with a lot of people but, and try to help individuals, but there are things that need to change higher up.*

\* \* \*

*J: would you say that your experience in Chivirapi has changed the way you live at all?*

*#: Well doesn't every experience you have change the way you live your life? And since that was one of the bigger life experiences, I am sure it did.*

*J: Have you changed any aspect of your life since you've returned from Chivirapi?*

*#: In Chivirapi, I saw people making a life out of a tiny fraction of what I have at my fingertips at home. I was fascinated, and a little ashamed of how much I must be wasting. To be honest, I can't*

*say that I've suddenly become a different person since coming home- I'm not super strict about recycling, water conservation, or waste, although I do make an effort to always do better. No, I can't say that my experiences have changed the way I live my life very much, but they have had an impact on the way I view my surroundings. Blatant waste makes me angry. Flagrant disregard for other people and how we impact them also makes me angry. I'd say that after my trip my eyes are open a little wider, and I am more thankful for what I do have. I am hoping that more experiences like this one will only strengthen that, and in turn will help me live a more meaningful, aware life.*

### **Quality of Life**

Quality of life is an interesting topic because it is often cited as the impetus for development work in general, and for clean water in Chivirapi specifically. The primary driver for the EWB-UI team to work in this community was cited regularly as a desire to improve lives through improved water and sanitation measures. Once team members actually travelled to Chivirapi there was an unexpected realization that perhaps the quality of life in the village was higher than originally perceived, and that happiness plays a role in quality of life as well. Furthermore, education has been cited consistently as the top priority for a better life. Lastly, the idea of mental well-being has also been discussed, such as the need for entertainment for a psychologically healthy community.

*J: So it sounds like you're focusing on your quality of life. How do we reverse that and rather than bringing up to Western standards of society, focusing on quality of life...*

*#: Bring Western society down to something else? Is that where you're going with that?*

*J: Well even, or how do we change the model that we use, for instance Chivirapi, to make it about quality of life through focusing on a quality of life, not necessarily bringing up to a Western scale.*

*#: Exactly yeah. I think that's a really cool thought. And through some education maybe we can say, and show them or tell them that these fancy gismos and technology isn't going to bring you anything more happy. You can be happy out there working with your family in the field. What a cool way to live. You're out there working with your family. You're with your family every day.*

\* \* \*

*#: So I'm thinking that the development we can really help them with is in their health and wellbeing, through clean water and sanitation. But you know, a warm shower is pretty nice. And that may be the*

*next step that they would want to take, I don't know if we would. That's not a basic need, it's kind of beyond EWB, but I guess there's nothing wrong with that in its own right.*

*J: Yeah and that's not up to us, maybe we don't have to go that far, but maybe you're right, maybe focusing on a quality of life through certain things like...well for instance, I had someone in one of my interviews prioritize what are three things that you would really want here. I asked a few people this, and one of the answers was pretty interesting. Number one was water, which is good – it's a good sign that maybe we're doing something right.*

*#: Yeah. And that's what they want, right? So that's good.*

*J: Two was, toilet, latrines, which is also a good sign. It would be good to have latrines that aren't just in the river. And a few people, it was unanimous, said soccer field. And I really didn't give that any credence...at the time. But the more we talk about quality of life and engineering, how hard would it be to engineer a soccer field?*

*#: It would be pretty easy.*

*J: And how much quality of life would that bring?*

*#: Yeah.*

*J: It's something to think about though. And I don't know if they ever think about that in development projects. I don't know, I don't know enough about it, but it's always “let's get pictures of poor babies who are starving, get a bunch of money, and go build a water system that might not last.” But do we ever say “wow these guys really like soccer.”*

*#: Yeah, entertainment. If that's how they want to enjoy themselves, that would be a great thing. Maybe we can do that on the side without telling anyone.*

\* \* \*

*J: What comes to mind when you think of Chivirapi initially? Of your experience there? Is there anything that steps out immediately?*

*#: It was intense. It was definitely, but in a good way. There were so many different aspects to it. I would say when we initially arrived in the community I was, I think I had lower expectations for their, I thought that their quality of life was worse than it actually was. They actually had access to, they had electricity, they actually had T.V.s in their homes, and that sort of thing that I wasn't actually expecting considering we were going down there. Because all we had really heard about this place was they have a really high infant mortality rate. They don't have clean water. So I was kind of*

*expecting it to be super basic survival type of sort of thing. And they actually have a pretty decent quality of life overall. And they all seemed really happy as well.*

*J: They seemed happy?*

*#: For the most part.*

\* \* \*

*J: And when we talk, keeping in mind that your definition of international development is based on the premise of improving the quality of life, what are examples of some of the things that need to happen to improve their quality of life? If you had to name some of the top things you noticed.*

*#: Education, I think would be number one in terms of a lot of different aspects. A lot of the older people that we talked to placed a great deal of importance on education. And the main reason they didn't continue their own was because they took it as far as it was offered at Bolivar. So, that's not necessarily something that we could do as Engineers Without Borders, but I think that's key to bringing up their quality of life.*

\* \* \*

*J: What else can we identify as things that would improve the quality of life, that are practical things to apply?*

*#: By?*

*J: By Engineers Without Borders.*

*#: Well one of the main things, the biggest is sanitizing the water. One of the main things is they don't really know how to install an irrigation system, but it's one of their main sources of income – is their crops. And right now they don't really have an effective means of watering them. So I think that would be really big, and that's one of the things that everybody asked for. The Engineers Without Borders could definitely do that.*

*J: So do you see those as the top three? Potable water, an irrigation system, and education<sup>24</sup>?*

*#: I think so.*

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<sup>24</sup> “EWB members believe in change that can contribute positively to the communities in which they work, in common action to provide new solutions,” writes the author of *Engineers Without Borders and their role in humanitarian relief*. This article explores the various impacts of EWB as an organization. My own exploration into developer intention has shown, beyond a physical impact on the world, that EWB has managed to instill values into developers that include the engineering perspective on a situation.

\* \* \*

*J: And what do you think are important things for someone to have a better quality of life?*

*#: Well for me, if you have knowledge, if you have a really good education, you have a really good quality of life. If you're wise, you're going to know how to figure it out. You don't need money to be intelligent. You don't need a big house. You don't need cars. If you're wise, you're going to know how to have those things. Probably you don't need all that things, but if you want it, and if you're intelligent, probably you'll have it. Or probably you can be intelligent and you just want to be in a small house and live good. You'll have it if you want. If you're intelligent, if you know how to work, if you know how to think, if you think before speak, you're going to have a lot of things.*

*J: So then when you talk about education, you're not talking about learning three languages, knowing how to do algebra, those sort of things. You're talking about learning how to think critically?*

*#: Uhuh, (yes) there's a lot a lot a lot of professionals, but I sometimes think I'm more intelligent than them. Sometimes they just say yeah I'm a professional and I'm always right. Do you have a title? No, I don't have a title but I'm more intelligent than you of course. It is how people is here. Do I hate Bolivian people? I hate a lot of Bolivian people. They just speak for speak. You know? They just tell things just for speaking.*

### **Global Motivation to Develop**

Health, happiness, and power are commonly discussed when musing over the abstract drivers of international development and globalization as a macro process. The informants who discuss this subject shed insight into the internal conflict that accompanies the work being done in Chivirapi. The ultimate goal is a vague focus on a better quality of life, which usually reflects an enhanced public infrastructure that can improve basic needs. These needs are usually thought to be health and education requirements. Improved community health is thought to provide a stronger platform for communities to focus on other aspects of their lives. Yet there are numerous obstacles that challenge the notion of whether development initiatives are in fact necessary. These challenges include the misconceived notion that communities are not already happy, or that the government will support the work that is done, or that these projects will succeed without greater political support. Lastly, there is a great concern that the developers are negatively influencing the local culture which could have serious implications for the subsistence and psychology of the community. There is not an apparent answer to these concerns, but the commitment and mental strength that it takes for the team members



to contemplate and discuss the matter shows an extraordinary amount of humanity that is lost when simply considering failed development work such as the remains from World Vision left in Chivirapi.

*J: Yeah, I saw a picture of that, and it made me laugh so hard when I saw that speaker. Why do you think it's important to, or why do you think there is this initiative to bring up to Western standards?*

*#: Why, I really have no idea. Maybe it's because of a capitalist mindset, because there will be more consumers. Or there's a general thought that if they bring everything up to Western standards that they'll be healthier or happier, I don't really know. Doing so, I don't know if I've talked to you about this before in some point in time, our involvement in communities changes them. Culture in my mind only develops in isolation. So if we do all of these development projects, we're kind of destroying culture and making it more, the world as a monoculture if you want to put it that way, and each area having its own standards of living and different ways of doing things. I think personally that it's pretty admirable that they do everything by hand in Chivirapi and a lot of other places. And it's a pretty cool way to live, I mean if it weren't so damn hard in certain cases, and if they knew a bit more about how to keep themselves healthy while doing that without destroying their culture, I don't know if that's possible.*

*J: Well with that isolation in mind, does that mean that maybe we don't have a place there?*

*#: Yeah, I mean I'm conflicted about that, and doing projects like this. I had some friends in Colorado at Colorado State, and they were going to do ecotourism, that's what they were going in to, and we had this big long talk about - "well what do you mean, you're going in there, you're bringing people in, you're bringing different thoughts and ideas to visit their culture, but at the same time you're changing culture, and over time their culture is going to be like our culture and you're destroying it". And in fact they changed their whole path on what they were doing based on that. So I don't know if it's a good thing or a bad thing, but that's my general opinion – that it's a fine line. So what I will be careful with when we go to Chivirapi or other places with Engineers Without Borders or wherever I do work in the future, is to focus on things that I think will help them without maybe influencing them as much as they could be influenced. Just by going there it changes things, we can't do anything without changing when they see us doing things, but certain things like washing hands and using toilets, I don't know if that's really a bad sort of development, where as you guys should all get jobs and engines and live like we do with television and Western standards, that in my mind is not a good type of development – it more destroys their culture.*

\* \* \*

*#: I think it's very important that Engineers in Action, all that groups in Engineering that want to teach the knowledge that they have, all the technology that they have, bringing it to poor village, poor countries. If you focus in the poor municipalities who need more in general than the poorer citizen. So for me it's awesome. We have engineers, we have programs, but probably we don't have all the knowledge that you have, probably we don't have the material that you have, all the money access that you can bring us. So for me it's awesome. Probably we have the same plans, probably we have the same programs, but for the future like in 20 more years. But you have the thing that you can do it right now. You can act right now. So for me, it's a big deal<sup>25</sup>.*

*J: So then it's about the resources that international organizations or governments have to help speed up the process, is that right?*

*#: Yeah.*

\* \* \*

*J: Well and speaking of change, why are countries developing? Why is it important to bring them up to Western standards? Why is it important to cause bigger change? Why is that necessary?*

*#: I would say that it's not necessary. Except for the ways that there have been contributing factors to decrease the health in areas. So like when you talk about, what's the name of that commentary – Flow<sup>26</sup>?*

*J: Mmhmm.*

*#: That's a significant contribution to the contamination of water.*

*J: What is a significant contribution to the contamination of water?*

*#: I guess cities dumping their waste, or some sort of company putting all of their effluent chemicals, or a slaughterhouse, or whatever contaminating things into water. Or some things like that where*

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<sup>25</sup> This was an interesting insight to contemplate from a Bolivian NGO employee, working for a US organization. In *Non-Governmental Organizations and Poverty Alleviation in Bolivia*, Sonia Arellano-López and James F. Petras discuss the exponential rise in NGO development projects in Latin America in the 1980s. In Bolivia, NGOs played a significant role in poverty alleviation, especially that associated with structural adjustment policies. They question whether foreign NGOs were, and are, able to be more successful in eradicating poverty than national agencies. They then present evidence that emergence of NGOs as implementers of development assistance alongside state reorganization at the time contributed to undermining grassroots organizations representing the interests of the poorest.

<sup>26</sup> Referring to the documentary *Flow: Water Privatization*, in which Irena Salina interviews environmental activists such as Vandana Shiva, Maude Barlow, Medha Patkar and Rajendra Singh. They explain why the earth is facing a water crisis, and how large corporations and global institutions such as the World Bank are behind it. Water privatization is a huge issue in Bolivia. Cochabamba, a city in the same region as Chivirapi, successfully protested water privatization in 2002.

*people are contributing to decreasing someone's basic needs. I think those are areas where I think it's important to change. But other than that, if people are choosing to live in a place and have been living in an area for hundreds of years, even if it's a very basic type life, that's a part of who they are and part of what they're choosing. I don't know, I think that it's a misconception that we have that it has to be this way.*

**J:** *Why not change the people who are affecting the environment, rather than change the people who are being affected?*

**#:** *Because that takes too much more work. (both laugh) As a short answer, it takes bureaucracy, and it takes working with a lot more people than ... it's less direct. I think it would be more effective in a lot of ways, but I think we don't because it's harder. Like when we were in Bolivia, we were like "why don't we just talk to Bolivar and tell them to make a waste water treatment plant. That would solve a lot of it. Like obviously it wouldn't solve animals walking around in the river, but it would definitely improve the quality of a lot of things." Well, you know, that would take a lot more work.*

**J:** *And we're just not willing to do the work?*

**#:** *Or even if we have people who are willing, say it's not even the work, it's the arguing with people, and it becomes negotiating with people in power. Because I think there are plenty of people who are happy to go work. "Just tell me what to do, I'm happy to dig a trench if you want me to, and I'm happy to go spend time with people" But when you have to spend time negotiating, and it's this slow process and it takes a long time to see results, that's when people are just...*

**J:** *What is the designed benefit for these people then, to bring them up to Western standards?*

**#:** *If we were able to bring everyone up to Western standards, what would be the benefit?*

**J:** *Yeah, I guess I'm just curious of what the point of development is in general. If we talk about development as a process, and development means that a developing country is in the process of being developed towards European or American standards of infrastructure, then why are we doing it? Why not just leave it how it is? Why do they need to be brought up to the American or European standards?*

**#:** *I don't think they do. I think that people want to be at a competitive level for commerce...*

**J:** *You think that the people who are being developed want to, or that the developers want them to (be at a competitive level of commerce)?*

**#:** *I think that people in positions of power want their developing countries to be...I don't know, I feel*

*like I've gone to multiple places and they live much simpler lives without as much developed stuff as we do and it seems a lot nicer.*

### **Community Buy-In**

Discussed previously in other sections, community buy-in has a direct impact on sustainability, shared knowledge and resource efficiency. There is a concern that if Chivirapi is not involved in the entire process of the project, then the cycle of failed development could continue due to a lack of interest, education, and ownership.

*J: But I think there's also a bigger implication which is the mentalities that are derived as a reaction to that. I mean, I kind of notice more of a 'give me' mentality in communities like Chivirapi. But they're not having to pay for anything. The way it was sold was we we're going in as technical expertise, but I think there's more to it than that. But you don't necessarily have a 'give me' mentality in somewhere people are paying for the service that they are getting. Even if it just involved getting the Bolivian government more involved, I don't know, I mean I'm just kind of brainstorming here. But do you follow what I'm...*

*#: Oh yeah, yeah yeah. And in fact I think that maybe EWB recognizes this a little bit too. Because they ask or even require that the community put in a certain percentage to develop that ownership I guess. When we had the conversation with Joshua the tech guy, he was saying they had to pay some certain amount and he was looking at our budget and it was like, they can't, and that's a little bit of a problem. Should we even be doing it if they can't pay anything? Or are there, "in-kind" donations they can make? We've talked about that through with education, and physical labour and things like that. And I do think we have to think about that and make sure that they have that ownership and they are vested in it, somehow, it's not just blip! "there you go!"*

\* \* \*

*J: But those societies have existed for thousands of years without that. Why do they need it now?*

*#: It's not necessarily, I would say, that they need it. And I definitely understand I think where you're coming from, that there's this kind of – or there can become a situation where there's kind of an imposition of one culture upon another. But I think that the best sort of development projects are the ones where communities are asking for help. In that case they need it because they realize it can enhance their own quality of life. They realize they have a specific problem, and they realize there*

*probably is a specific simple solution that's implemented everywhere else in the world that they don't have access to.*

### **Lessons Learned**

In her chapter *Volunteerism, Leadership, Political Socialization and Civic Engagement of the Handbook of Adolescent Psychology*, Constance Flanagan explores the impact of service learning on students short and long term. “The most consistent findings,” she says, “are that young people feel efficacious and good about what their engagement and that an ethic of service develops – that is, there is an increase in concern for others, in a sense of social responsibility and in motivational and behavioral indicators of continued service after initial involvement. Some – yet not all – studies have shown prolonged, life-changing impact from service; Astin, Sax and Avalos found in their 1999 nationwide longitudinal study of college students that ten years on from a service trip, people were likely to have a different, more service-focused outlook<sup>27</sup>. Likewise, the paper "Long-Term Effects of Volunteerism During the Undergraduate Years" by Linda J. Sax and Alexander W. Astin and Juan Avalos found undergraduate service participation to be positively associated with a variety of cognitive and affective outcomes measured nine years after entering college<sup>28</sup>.

As a follow-up question posed more than a year after the initial assessment trip, I asked EWB team members to share their reflections upon their time in Chivirapi by asking, “What have you learned from the people of Chivirapi?” I have provided no summary for the following accounts, as I believe they deserve to stand on their own for audience interpretation.

\* \* \*

*I think I learned from them (especially as an American) that there is really almost no correlation between happiness and money. I have met many poor people in my life, but never someone poor enough to make shoes out of tires, for example. Yet they all seemed to be fairly happy and content with life. Every so often when I am working hard on something that is stressing me out I try to ask myself if it will really make me happier.*

\* \* \*

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<sup>27</sup> Flanagan, Constance A. “Volunteerism, Leadership, Political Socialization and Civic Engagement.” *Handbook of Adolescent Psychology* (2004): 728-734

<sup>28</sup> Linda J. Sax and Alexander W. Astin and Juan Avalos. "Long-Term Effects of Volunteerism During the Undergraduate Years." *The Review of Higher Education* 22, no. 2 (1999): 187-202

*I cannot say that I have learned as much from the people of Chivirapi as I would like. Our time in the community and our interactions with the people were very short. However, from the little interactions I have had the people of Chivirapi taught me that people are intelligent, they solve problems, no one is ignorant, and I am not some white savior. The people of Chivirapi have worked extensively with concrete and pipes. They have all the skills necessary to solve their water access problems. They do not need to be taught rudimentary concepts but are able to be team members and even teachers to our team that travels to work with them.*

*Not only did the people of Chivirapi teach me that people are intelligent they also taught me some better questions to be asking based on this new assumption. Instead of "what water sources are available?" and "how can they best be designed to the needs of the community?" questions like "what water sources do you think would be the best to use?" "Have you explored other solutions?" "Why have these solutions not worked?" "Are their local opinions about the sources that an outsider might not understand?" Questions that assume the intelligence of the community are so very much more productive.*

\* \* \*

*I suppose one of the first things that I learned from our trip is that we as a human race are so diverse, and each human being has a unique life experience and perspective. The people from Chivirapi, a place so small and remote and poor, had a completely different set of life experiences than myself, and I struggled with not 'ranking' different cultures- as in mine is better than theirs, mostly. But when I look back on my time in Chivirapi, what always sticks with me are the smiles, the broken conversation that filled in most the gaps with smiles. I remember Eloy teasing me the first night we got there, for my very poor Spanish attempts. It was the first little barrier breaking down for me to see past what my preconceived notions of different cultures, different people, are. I like to think that I have always tried to be a very open, good person who tried not to judge a book from its cover. But I realized after this trip, after meeting the people of Chivirapi, that I hadn't been taking it far enough. Looking more globally, I'm starting to see that each culture has so much to teach us, and that the tendency to judge and rank everything and everyone is only to our detriment. And in the end, it's all about finding that human connection, from sharing a smile to a game of soccer. When I first got to Chivirapi, I was shy- more than I even knew- and hesitant to throw myself completely into the experience. But after the EWB trip, I feel like I can build on it, making me more adventurous and more open to new people and new places.*

## Chapter 6: Discussion

The Chivirapi Assessment Team has faced its fair amount of challenges throughout the process of planning, traveling, and working in the community. Many of the team's expectations have been adjusted, and in some cases tarnished. They have returned with new realizations of their partnership. Their goals have been clarified through a better understanding of what is useful for the community, yet muddled by understanding challenges with sustainability, collaboration, and cost efficiency. And at the end of it, they have learned more about themselves and the world around them. This section discusses the goals and challenges that confront the team, and offers some last reflection upon their efforts.

Prior to traveling to Chivirapi the Assessment team had an impression that the community of Chivirapi was an impoverished Quechua community in the poorest part of the poorest country in South America. There was also an understanding that the community desperately needed potable water. It was also known that there was abandoned infrastructure from a previous NGOs attempt to provide a water system. With the minimal amount of knowledge and no community contacts beyond EIA, which was six hours away, there was little that could be done to ensure that the team did not develop misconceptions about their partners. Many interviews exhibited a preconception that the community would be full of people who were desperate for help. There was a belief that the villagers were destitute, miserable, and suffering from waterborne illnesses that threatened their health and happiness. It was also assumed that child mortality would be exceptionally high.

The team's general expectations were altered upon meeting the community. Many team members pointed out that they were astonished to find that the community members seemed generally happy with their lives. Some team members were also surprised to find that the community did not need EWB to save them. They did not report any abnormal rates of child mortality or intestinal trouble. There was even a water project in progress with a partnership between the community and the local government.

The team members did not in general experience any form of transformational experience from Chivirapi. They did not report to have changed their lifestyle in any marked manner because of the trip. This could be a direct consequence of their expectations of the community's destitute state, as well as personal motivation for becoming involved in development work. Many informants noted that they joined the project because of a drive to help people. Upon their introduction to the community, many experienced disillusionment as a result of unclear direction to help the community. It also seemed that some team members felt that they did not receive the recognition or attention from the

community that they may have expected. Each member did, however, report that the journey affected the way they perceive their world, and garnered a greater appreciation for life and happiness. Likewise, happiness has become a topic from the trip that was not originally discussed, yet seems to have a large influence on expectations and realizations.

The assessment trip resulted in numerous goals for the planning and design stages. Education was found to be a top priority amongst everyone involved, including parents, children, team members and the local doctor. Regardless of whatever solution is designed for Chivirapi, it is clear that the educational component will need to be thought out thoroughly for any chance of success. It was also identified that water, especially potable water and irrigation, were top priorities. Sustainability, as expected prior to the trip, is one of the top priorities of any design solutions. Yet to have a sustainable project it is understood that the team will need to invest more energy into building a strong community partnership. All of these components will need to come together to produce a successful and sustainable project. The team will need to pick something that the community needs and wants, they will need to work closely with the community, and they will need to design a strong educational program to accompany the implementation.

The informant interviews have identified the three issues that should be discussed as a team to improve the chances of creating a successful development project. All interrelated - resource inefficiencies, student involvement, and cultural interference - are all topics that have conflicted the assessment team members. It has been mentioned numerous times that the amount of time and money that has been spent to conduct the assessment trip would be unacceptable from a professional point of view. Yet the inefficiencies can be counter-argued with the NGO model, the student experience, and the international relationship. From a business perspective there are numerous models that could more efficiently install a water system for the people of Chivirapi in a more affordable and effective manner. However, without EWB and the student experience, it is likely that the students who travelled to Chivirapi would have never been interested in assisting the community in the first place. There are subsequent arguments that have been explored regarding the value of students traveling, the detriment to the community, the option for fewer students and more local professionals. There are numerous approaches that could be taken, but ultimately it will be up to the team to explore this discussion further. In a similar manner the question of cultural interference presents many arguments over whether the team should even be involved in their efforts at all. Any work that they perform actively assimilates a foreign culture and gives American students an unfair authority to interfere with the lives of a community that does not have the financial or political advantage to reciprocate. This imbalance of power brings up multiple debates that will also need to be discussed thoroughly by the team.



Ultimately though, it seems that community buy-in and project sustainability will be an unrealistic goal without honestly exploring these topics, and weighing the decision making process with economic, cultural, and ethical questions in mind.

Despite the challenges to creating a successful project or projects in Chivirapi, the EWB-UI team has demonstrated that they actively consider the ethical implications of their work. They have proven to be empathetic and resilient with their determination to help a group of people who they have only met once, despite disillusionment, logistical challenges, and concerns over success. The challenges that face the team have implications for numerous people. There are numerous possible consequences that should be considered if the Chivirapi partnership fails: Donor money could be squandered, the carbon footprint could be increased for a negative gain, the students could become disillusioned with humanitarian work, the people of Chivirapi could become disenchanted with foreign collaboration and Western standards of sanitation, or the fabric of their culture could be inadvertently degraded.

It should, however be considered that there is an inverse to these arguments as well. There are implications if the EWB-UI team should decide that the risks are too great, the model is too inefficient, or they have lost interest as a team. The same donor money will not necessarily be spent in a more efficient manner or for a more altruistic endeavor. Students who have a desire to travel and explore the world may do so regardless of the opportunity to partner with a community that challenges their notions of poverty, happiness, and progress. Without the opportunity to make a human connection with those who live in a much different culture, income bracket, subsistence pattern, and society, the humanitarian efforts that they champion may maintain inaccurate or impractical expectations, just as the students who travelled to Chivirapi had before their expectations turned to be inaccurate. Lastly, the people of Chivirapi and their culture are subject to change with or without interaction from the University of Idaho. Culture does not exist in a vacuum in the modern world, which presents an opportunity for the EWB team to either make a difference or neglect the project in general. Regardless of the decision, development will continue, cultural diffusion will persist, and the people of Chivirapi will keep smiling.

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**Appendix A**

**Interview Consent Form**

The University of Idaho Institutional Review Board has approved this project.

- The purpose of this study is to learn about water and health in the community of Chiwirapi and how the construction of a water treatment facility (well, filter, pump, etc.) might affect these issues.
- You will be asked to participate in an interview with questions about both the history and current state of water and health in the community. The study should take approximately 30 minutes to an hour depending on your availability.
- As a participant, you should be aware that some people consider the interview process difficult because of the personal experiences you will be asked to share.
- You will benefit from this project because it will help the Engineers Without Borders better understand your concerns regarding water and the construction project. This will benefit the entire community because your information will help us build a better water treatment facility.
- If we find the interview is creating stress or emotional difficulty for you, we will stop the interview.
- All information you provide will be placed in a locked case with access only available to me. Your name and identity will be concealed to protect your privacy. I will be the only person with knowledge of your identity in association with the information you provide.
- If you have questions about the study or interview, you can ask me during the interview, when the interview is complete, or at a time you feel is appropriate.

Investigator

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- During the course of this interview, you may stop at any time with no penalty.
- If you do stop your participation in the interview, there will be no penalties associated with your withdrawal. All you need to say is that "I no longer wish to participate."
- I have reviewed this consent form and understand and agree to its contents.

Participant Name \_\_\_\_\_

Date \_\_\_\_\_

Parent or Witness name (if appropriate) \_\_\_\_\_

Date of Birth \_\_\_\_\_

**Interviewer's Name** \_\_\_\_\_

**Appendix B**

**Letter of Approval: Institutional Review Board at the University of Idaho**

## University of Idaho

March 16, 2012

### Office of Research Assurances

#### Institutional Review Board

PO Box 443010  
Moscow ID 83844-3010

Phone: 208-885-6162  
Fax: 208-885-5752  
irb@uidaho.edu

To: Frey, Rodney  
Cc: Pearson, James

From: Traci Craig, PhD  
Chair, University of Idaho Institutional Review Board  
University Research Office  
Moscow, ID 83844-3010

IRB No.: IRB00000843

FWA: FWA00005639

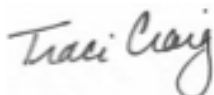
Title: 'Building the Basics: an ethnographic study of a water development project in the Bolivian Altiplano'

Project: 12-085  
Approved: 03/15/12  
Expires: 03/14/13

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On behalf of the Institutional Review Board at the University of Idaho, I am pleased to inform you that the protocol for the above-named research project is approved as offering no significant risk to human subjects.

This approval is valid for one year from the date of this memo. Should there be significant changes in the protocol for this project, it will be necessary for you to resubmit the protocol for review by the Committee.



Traci Craig