

Irrigation Channel Improvement  
Aripalca, Bolivia  
University of Florida

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**Section I:**

The goal of the irrigation improvement project is to relieve the inequity in water access for irrigating crops during the dry season for the people of Aripalca, Bolivia. The project addressed the restoration of the most critical points of the community's irrigation channel which lost approximately 96% of its water flow prior to the improvement project. The project is being implemented in two phases due to the great length and damage to the channel. The second phase and completion of the irrigation project will be during the summer of 2015.

The financing of the first phase of the project was achieved via grants and presentations at local rotary clubs. A grant from Boeing for \$3,000 was acquired via the Engineers Without Borders Nationals grant application. Also two rotary presentations to Fernandina Beach Rotary and St. Augustine Rotary resulted in \$1,500 and \$4,000 earned respectively by the team.

As a chapter of EWB-USA we make a minimum five-year commitment to our partnering community to ensure the sustainability of the project and monitor the long term effects of our projects. The irrigation channel improvement project helps 420 community members receive a reliable water supply for crop irrigation. The subsistence farming community benefits from the stability and reliability of the water supply, especially in the dry season when community members further south would not receive enough water, resulting in tensions in the community between the northern and southern farmers.

The main goal of this project is to replace approximately 750 meters of the West channel (in two phases) in order to provide a sufficient flow of water to the farmlands of the community by restoring the water system that was already in place. The team implemented a sediment trap and 200 meters of piping with help from community members.

The majority of the obstacles the team faced during the project were unforeseen differences which could not have been anticipated. For instance, Bolivian two by fours are made of a significantly denser timber than American two by fours thus requiring far more energy and time to cut. This problem was resolved by finding a community member from whom we could borrow a rotating saw to cut the wood. This posed another problem, electricity was not available on site, therefore cuts were made beforehand and the wood transported after it was cut. This process caused the building of formwork to be significantly more difficult. The form work for the sediment trap was redesigned multiple times to account for constraints in availability of trucks and progress on site. While many technical issues arose they were all addressed and solved with help from community members. The team also diligently had meetings every night to discuss the progress for the day, the roadblocks that lie ahead, and to plan the schedule for the next day. This practice was immensely helpful and allowed the team to complete the project regardless of the multiple roadblocks that were encountered.

The more difficult aspect of the project was communicating effectively with the community. While communication with the community is maintained through the year, there were still some questions about the details of the project. We came in with the assumption that the community was aware of the scope and depth of the project. Communicating the technical details of the project so they were understood by the entire community and addressing concerns and questions was the most challenging part of the project.

This project has two phases and we implemented the first phase. We hope to return to Aripalca, Bolivia in the coming year to complete the second phase of the project and complete the piping to the farmlands of the community members.

## **Section II:**

Defining peace can often be a precarious thing. It is easy to define peace as the absence of conflict or violence but this often does not account for the state of being of the community. Not all struggles manifest in violence and thus a community may have many plights but no violence and still no peace. It is difficult to define peace curtly, since many factors play into the peace of a community. Social and financial equity, resource equity, as well as presence of security within the community, and strong interpersonal ties all lend themselves to the establishment of peace.

Our project aims to allow the community of Aripalca, Bolivia to work with us so we can give them the means to help themselves. We are trying to address inequity in water resource availability for the community. Aripalca is a subsistence farming community and thus their irrigation water resources are vital to their ability to survive. Our project contributes to peace in several ways. In the short term, we have contributed to the peace of mind for the people, especially those who experience water scarcity in the dry season. In the long term, we have worked with the community to empower them and show them exactly how much they are capable of doing together. We hope the increased water supply will allow the community to farm more reliably and increase their harvest. This would allow for the community to profit from their produce and contribute to the community's well being and economic stability in the long term. This project also includes a monetary contribution from the community, creating a sense of ownership of the project and promotes sustainable measures for proper maintenance. The fundraising efforts on the part of the community also contribute to the organization of the community. All these aspects feed into the peace of the community.

This project has not only positively impacted the community but also the members of the team traveling to Aripalca. Living in a community with a different language, culture, and customs allowed us to truly appreciate that despite many surface level differences, people are fundamentally the same everywhere. We often reverted to smiles, body language and gestures to communicate and found this often sufficed. We quickly became aware of how little one needs to survive and how grandiose and unnecessary our lifestyles seem in comparison to the lives of the people of Aripalca.

“ The greatest support lies not in emotionless contributions, but in passing down a physical package of unionship and equity. Giving the less fortunate a chance is the everlasting source of cultural coexistence and coherence.” Ahmed Hemeid

