

Section I

a) Title of Project: "Rainwater Harvesting Systems"

Country where the project took place: Bolivia

College: University of Florida

Student(s), Student(s) Home Country, Student(s) College, UWC attended (if applicable):

Luis Delfin- USA -UF

William Wise, Ph.D., P.E. - USA

Austin Thompson -USA; UF

Kathleen Kirsch -USA; UF

Andrew Schwarz -USA; UF

Mike Cossa -USA; UF

Trace Rohlwing -USA; UF

Ahmed Hemeid -Palestine; UF- UWC-USA

Luis Mendieta -Bolivia; UF -RCN-UWC

Geronimo Etchechury; Uruguay -UF UWC-USA

Fernando Fernandez; Bolivia - Universidad Autonoma Tomas Frias

Jamie Longville; USA - UF

Project blog or website address, if applicable: <http://ewbbolivia2012.blogspot.com/>

b) A two-sentence summary of the project goals

Improving the quality of life in Cachitambo by providing a reliable water supply through installation of a water harvesting system.

c) Did other fund-raising efforts contribute to your project? What were they?

There were other organizations that helped contribute towards this project. Lockheed Martin provided a grant to EWB-USA, which we won in 2011. This \$5,000 grant helped primarily with travel and visa expenses.

d) Provide details about how your project actually worked. Were there unanticipated difficulties? Budget constraints? Language or cultural barriers? What worked well? What didn't work well? How many people benefitted or will benefit from your project? Who are these people? What is the long-term impact and sustainability of this project? Is there a future for your project?

The rainwater harvesting system project was progressing smoothly. However, community leaders Guillermo and Jacinto Mamani changed their minds about their feelings towards this reservoir dam project on that first day of implementation. After a year of designing it through correspondence, the leaders of Cachitambo affirmed that the majority of Cachitambo's residents decided to live outside of the community, hence using and maintaining the water harvesting system would be inefficient and that they would rather have water tanks instead of a reservoir dam system. Before they suddenly changed their minds, the community expressed interest in this project by signing agreements and providing construction workers the first day of implementation. The EWB-UF team was very surprised by this because the community had expressed great interest in this project for the past year, but had a change of heart at the last minute.

Prior to the first day of implementation, our design team had already decided on the material and made purchases. Nonetheless, most of the equipment that was bought will be sent back and the money value shall be reimbursed. Further details about this are in the expenditure budget report.

While the reservoir dam project had to be cancelled, the community responded really well to the rainwater-harvesting project. Last year, we installed gutters and water tanks at their community greenhouse, and reached an agreement with the community that if community members installed gutters on their houses, we would provide them with water tanks. On this trip, we split up into groups to visit each individual house and discovered that twelve houses had gutters installed. We used our experience in gutter and tank installation to consult families on how to improve their installed gutters, and finally provided them with the twelve tanks. This rainwater harvesting system is a very sustainable and simple solution for families who are in need of water storage during the arid dry season. In the future, more families may install gutter systems and save up for water tanks of their own. This would have an even greater impact on the community, especially because of the simple yet sustainable nature of our design.

Since our work with Cachitambo is coming to an end, we developed contact with a new community called Aripalca via our partner organization "Engineers in Action." We made a site visit with the possibility of constructing a modified reservoir dam system next summer. We used some of this grant money to fund extensive water tests in their spring, in order to determine what kind of water treatment should be done in the future.

We are very optimistic about the new project. Our project in Aripalca will serve 100 families who are in eager need of an efficient water piping system. Despite the change in plans with the Cachitambo community, our experience there was still productive. We are assured by the Aripalca community's level of commitment, secured by a warm welcoming ceremony when we visited them in August. Overall, we are thrilled to start the new project.

Section II

a) **In several paragraphs, address each of the following questions:
How do you define peace?**

One form of peace is the absence of conflict, especially over resources. Our goal is to allow the less fortunate to have a sustained income in order to exclude conflicts over resources. Nonetheless, while many philosophers and historians have had varying definitions, we as a team contributed our own thoughts and definitions of peace to create a unified goal for our project. To us, peace is not merely the quelling of conflict, but can also be the end result of unification within a community. Cachitambo has a very sparse layout of houses, and the residents primarily work in the mines during the week because they do not have the resources to stay in the community full time. For them - we feel- peace would be not being compelled to work in the perilous mines and to have their children attend school regularly.

How does or will your project contribute to peace? Short-term? Long-term?

Our goal was to bring the families of Cachitambo a reliable source of fresh water to drink, as well as to plant and help the local school to have consistent water supply. The short-term contribution we made was giving the families peace of mind by not having to worry about a shortage of water. Our gutter and tank systems will hopefully supply enough clean water to the families so that the children will be able to stay in the town and go to school. This is a major step towards the long-term goal of making the community closer, as well as keeping the children out of dangerous mines.

Has your project changed the way you think about the world? How has it changed you?

Yes, definitely. There are different aspects that can be compared between Florida, USA and the two communities in Bolivia: the geography, the wealth, the people, and their traditions. First of all, it is a big change going from a Florida landscape composed of beaches, sand, palms, and hot weather, to an Andean landscape with mountains, rocks, very few trees, and cold weather. Also, we noticed that we were not in a country as wealthy as the United States. The closest important place, Potosi, is a very old city, which has narrow streets, indigenous people dressed in their native costumes, and low prices everywhere we went. In addition, the people in Cachitambo and Aripalca had small, precarious houses made by them. The people do not have cars, so they walk everywhere, and they do not mind taking their llamas or sheep for a long walk everyday. They usually chew coca leaves, do not talk too much, and are very polite, calling each of us "Ingeniero/a" (Engineer). In addition, it was very impressive that in Aripalca we were received with a huge barbecue, and each member of the community passed by to say welcome, offer us their food, and invite us to their homes to spend the night.

All these aspects, and these new experiences we have been immersed into for around two weeks, impacted the way we think, see, and understand the world. You learn to tolerate, accept, and enjoy the different aspects of these new places. The most interesting part is that once you start bonding with the members of the community, the Bolivian engineers, or the local contacts we have in the country, you do not think about the differences anymore. Slowly, both sides become one single group.

b) **Complete this section with a one to two sentence personal statement, suitable for use as a quotation, addressing how and why this project was valuable and what was the most important thing you learned as a result. (Indicate student's name for quote attribution.)**

"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

Photography

