A Brief Experience in Post-disaster Relief in Southwest Peru.
Cien Keilty-Lucas
August 25, 2008

Prior to my journey to Ica Peru, I presumed the worst: an ineffective and possibly destructive disaster response. This assertion was propelled by the plethora of disheartening reports from local and foreign news agencies published since the initial Earthquake in November 2007. According to my various sources, the ineffective disaster response was the product of ill equipped, ill advised, and poorly conducted nonprofit, community and government organizations. My two-month experience in the disaster response sector solidified much of these criticisms. Indeed, there were outliers, though my experience providing me with first hand evidence of some of problematic tactics of post disaster relief and the problems they cause within Ica Peru.

In late May I received a grant from Tulane’s Stone Center Latin American Studies to aid my investigation of post-disaster urban design, repair and building within a developing country. In November 2007, Southwest Peru was devastated by a catastrophic, 8.0 earthquake. The quake’s duration reportedly elapsed three minutes, shaking over 80% of residential structures within Southeast Peru to the ground. As a result, thousands lost their lives, while those that survived were left ruble and distant memories of the structures that provided homes, businesses, community services and simple shelter. The Peruvian government initially assisted residents, donating various goods and services absolutely necessary for the affected populations survival: food, water, and simple temporary shelter. However, a greater percent of the aid received by Ica residents was the product of international as well as a few local aid agencies. With or without collaboration, donors and volunteers continued to assist Ica, Peru’s beleaguered residents.

Initially, my research was to follow a regimented schedule of volunteering and visiting various worksites in Ica’s three most affected cities. Ica (the city, located within the state of Ica), Chincha, and Pisco. Depending on the availability of work, I planned on volunteering in each of the three cities for 10-15 days. But due to the miniscule amount of relief organizations that remained, in the beginning I was limited to volunteer opportunities only in Pisco and Chincha. Finding an outlet to volunteer was trying. There
was, and remains a severe lack of relief organizations working within the repair and construction sector in the most adversely affected regions of Ica. Those that are present, rarely possess the capacity to build functional living spaces for families and communities at a large scale. The Peruvian government has initiated programs since the earthquake, however, much of the response has been coordinated and implemented by individuals within the non-profit and community organized sector. Communication between these groups and with the communities they served was by no means perfect. Many organizations supplied assistance that could have been directed in much more effective ways, while non-profits largely neglected to collaborate to improve projects. As a result, the people being assisted often suffered the consequences; receiving aid in the form of construction materials, funding, food, water, and shelter that was often compromised by poor planning, managing, and misallocation of resources. Even so, the government’s efforts were the most frustrating.

Following the devastation, earthquake victims were instructed to apply for government assistance through the newly implemented BONO6000 plan. The Ministry of Housing created the program with the assistance of the Peruvian government’s FORSUR disaster response network. To qualify for assistance, applicants must meet three specific criteria. The applicant must live in Ica, Pisco Chincha, Cutiote, or Huancavelica, is able to legally prove that they own the land (usually very difficult, and complicated my Peruvian bureaucracy), the resident must clear the property of all rubble and unsafe housing (a costly process, that includes all of the post earthquake structure, even salvageable portions). If these decisive factors are met, the resident qualifies for up to 13,000 Soles (approximately 4,000 dollars). A traditional home made of brick, cement, and iron rebar column reinforced home (which offers a greater amount of protection to the structures inhabitants during earthquakes) range between 6 to 12,000 dollars depending on location and contractor fees. Consequently, effected residents must then rely on savings, family, and friends to conjure the additional money needed to support the construction. This is incredibly problematic. Most residents who receive funding simply build as much livable space as possible with the little money they have allotted to them. I empathize with the families. There is little to no education available to families on tactical building in earthquake prone regions. Additionally, families wish to
accommodate themselves with as large of an indoor space to provide comfort and shelter for family and friends as possible. But ultimately, safety is largely disregarded as materials are stretched, and construction effectiveness diminishes with hastened work, that values present functionality over long-term safety.

Because of these funding methods it is evident that the Peru housing assistance programs does not value importance of preventative planning. After receiving aid, most families are typically just as susceptible to injury and death upon the next earthquake as they were in November 2007. Some non-profits noticed this lack of judgment, and began to work with families to develop safer strategies of rebuilding and repair. Although the critical mass of volunteers, contracted labor, and funding that is needed will not be present to aptly assist the tens of thousands of families that are still in need of assistance.

A majority of my time was dedicated to volunteering with a constant presence in Pisco and Chincha: Burners Without Boarders (BWB). BWB is Non-profit extension of the San Francisco based artists group, Burning Man Organization. The organization was the lone foreign not-for-profit working within Pisco only four months after the initial earthquake. Over the last 9 months BWB has attracted over 250 volunteers from 33 different countries to assist in the building and repair. BWB’s efforts were designated to a variety of types of projects; residence reconstruction, primary school construction, foundation pours, roofing, general home repairs, prefabricated residence construction, brick laying, however their focus was largely on community shared spaces. Due to the constant flow of volunteers, as a result of being the only stable outlet available to volunteers, the organization withheld the capacity to work simultaneously on upwards to six projects. The organization became well known within all of Pisco for more than supplying the town with “Gringo’s.” The volunteers long standing presence, dedicated work and comradely with much of the surrounding were touted as unique characteristics for an international aid organization. For years to come BWB’s efforts will be remembered by the variety of prized repair and construction projects, initiated out reach programs, and the relationships formed with the communities they served.

The most interesting, and arguably the most important effort of BWB was the “Corner Stone Project.” Andy Fisher, a fellow project manager, developed a community bathroom constructed of rebar reinforced poured concrete. The twelve units built in the
field provided a plumbed in water line, septic system, functional toilet, sink and shower stall. The “shitters” (as they were known by the entire staff and community) were incorporated into co-housing developments. Four families could build their homes around the unit, and be provided potable running water (to Peruvian standards), where previously the residents would mainly utilize alternative means to dispose of human waste themselves. The Corner Stone Project provided a needed response to the prominent lack of running water within the Pisco Playa, as well as the mounting public health risks surrounding informal methods of human waste management.

The Corner Stone Project design was developed in an ideal fashion. Members of the community were invited by BWB project managers (half of which were fluent in speakers of Spanish) to meet in the heart of Pisco Playa to discuss immediate concerns facing the community. Nearly 40 men, woman and children took part in the first public forum. The need for safe water access was a prominent concern throughout the meeting. Ideas were shared of different available mitigation techniques that could feasibly be implemented with a restricted budget. Collaboration with the community was critical quality of BWB. Community members, especially local tradesmen, or “maestro’s” were integral to each of BWB’s many projects. The group deems its self a sustainable venture that emphasizes the importance of collaboration with the community it is attempting to assist. BWB utilizes its capacity to communicate with the communities native Spanish speakers to ascertain the “actual wants and needs” of the communities it serves. BWB project managers then work with local carpenters, plumbers, and electrical professionals to design and implement construction and repair with the resources available.

As an experienced independent contractor in the United States I possess the technical abilities to assist relief organizations much more than the typical volunteer. BWB’s lacked a sufficient amount of experienced tradesman, experienced project manager and individuals with a history of manual effort. Consequently, I immediately took on a role of project manager. From the beginning I worked alongside community members, local volunteer tradesmen, and fellow BWB volunteers. I was responsible for an effective delegation of labor, budget management, project design and implementation. It was a challenging venture, wrought with poor construction standards. Yet I enjoyed my time working along side community members and fellow volunteers.
My experience in relief work was not devoid of complications. Working in a foreign environment, assisted by inexperienced volunteers, with a miniscule budget and less than adequate construction materials, created a frustrating work environment. This was personally the most challenging hurdle I faced in my time in Peru. Knowing that I was producing products that were substandard to United States building codes, and that residence housing construction was prone to structural failure over the long term.

Foundation pours are a perfect example. Families are unable to purchase the appropriate proportions of concrete, thus experienced workers mix concrete and aggregate at a ratio of 10 to 1 to compensate for the lacking concrete. The product is endorsed to be safely functional at ration of 5 to 1, at best. I shuddered while I shoveled additional filler into the mix. However, this was my first experience in post disaster relief work. I understood that if mixed appropriately, we would be able to provide only half the amount of cement to families, thus only half of a foundation to a home. But upon the next earthquake the homes with poor quality cement foundations will be much more susceptible to structural failure.

What was truly lacking by the various relief organizations that served in Post Earthquake Ica was openness to ideas for innovative design. Organizations spent much of the first eight months following the quake removing and disposing of rubble made resulting from the 80-90% destruction rate of the states structures. Rather than attempting to adapt traditional methods of building, the groups deemed rubble a useless burden. A majority of the hundreds of thousands of tons was simply dumped on uninhabited regions of the cities periphery. The tremendous amount of rubble now serves as constant reminders of the power in which tectonic plates wield. Rather, the same rubble could have been utilized in the rebuilding process. Architecture schools, businesses and independent contractors could have been invited to assist in design. The ministry of housing could have contracted architecture agencies to develop ideas on how to most effectively utilize rubble to prepare safe and structurally sound shelters for the tens of thousands with devastated homes. Or simple research into various methodologies of creative use of the millions of tons of rubble that now nearly skirts the entirety of some Southwest towns could have been done.
The LA Architects group has even produced such a structure. Titled “the Ruble House,” the group has designed and produced prototype rubble constructed homes to meet the needs of communities just like those in South West Peru. The shelters simply utilize the rubble by erecting caged boxed that are filed with ruble and supported with pilings and simple anchors systems. Corrugated Steel is then hung from suspension lines driven within the ruble filled gages to create a reliable roof. The one floor home is cost effective, can be built from recycled materials, time efficient, and simple in design. Yet, the housing ministry, along side nonprofit groups has done little to introduce and incorporate new methodologies of design.

Through my experience working in the Peruvian relief sector, I discovered that government affiliated and non-affiliated organizations, are largely ill equipped to effectively meet the needs of the community they serve. As a result, the meager amount of assistance available in the forma of time, funding and man-hours are spread thin to make the broadest impact possible. While in the short run family’s are equipped with functional shelter the relief organization feeds into the cyclical relationship of disaster and aid. Without investment in preventive methodologies of natural disaster planning the problems that Chincha, Pisco, and Ica Peru are facing today, just as they face in 1967, they will face yet again following the next disastrous earthquake.

It may be argued that the professionalism or legitimacy of my academic research was devalued as a result of not receiving IRB approval, though I feel that my rigorous field experience enabled me to gain a much greater and real understanding of what was taking place. The Stone Center Grant enabled me to visit, and volunteer with a variety of Non Profit and Community organizations throughout Ica Peru. Additionally, it provided funding to investigate alternative building methods within Peru's Mountainous regions. Specifically, I worked as a glorified plumber and electrician for an orphanage in the periphery towns of Poombabomba Peru. There I visited with the children in a local Carpentaria in which the children were educated on the fine art of wood working, as well as developed a plumbing system to provide potable water to the orphanages cattle farm further down the mountainside. It was a wonderful experience that allowed me to witness variety of the additional types of housing used by Peruvian populations.
The six weeks working in the towns of Ica was a tremendous learning experience. My engagement with community members (initially, largely assisted by translators or fellow volunteers) enabled me to understand the interests or specific needs the family, or greater community possessed. Through effective communication and collaboration BWB was able to address wants and needs of the individuals(s) being assisted. During the repair and construction projects the family members and surrounding community members were encouraged to assist the volunteers. This open, and inclusive atmosphere created a stage for dialogue between the volunteers and the immediate individuals there work was impacting. Volunteers and community members alike seemed to thrive in these moments. Children would run along side wheel barrels, skipping to the rapture of concrete mixers and bucket brigades, passer bys would curiously stop and soon offer there guidance, while family members would often insist to aid in anyway possible. Yet, this picturesque seen is one organization, working on at most six projects a day serving a greater community of over 300,000. What is needed is a further reaching, and more effective response from fellow nonprofits, and more importantly, the Peruvian government must begin to take responsibility for the citizens it represents.