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2/28/14 – Day 0

Today begins our team's two-week Guatemala adventure as part of Notre Dame's Business on the Frontlines course. In this course, Notre Dame MBA, Law, Peace Studies, and Biology students collaborate with Catholic Relief Services (CRS) to work on real world problems while getting a crash course in economic development. Our team is traveling to Guatemala to study the cultural acceptance and economics of amaranth, but we're not alone: four other teams are on their way to Cambodia, Ghana, Lesotho, and Rwanda.

So far our class sessions have focused on teaching us a common language and examining a number of facets of development. Some highlights include social entrepreneurship, human trafficking and business, rule of law, and civil society and development. Our team has been talking with CRS Guatemala to understand the problem and build out our hypothesis and research plan.

What is amaranth? An ancient grain, cultivated in pre-colonial mesoamerican society, amaranth was replaced with corn (maize) by the Spanish because of its connection to pagan ceremonial rites, including human sacrifice. As it turns out, amaranth is in fact an especially nutritious crop with high protein content and numerous amino acids. CRS is interested in reintroducing amaranth to fight chronic malnutrition in the rural San Marcos region of Guatemala. Our team will spend our time in Guatemala trying to answer two questions:

- 1) Is it feasible and what will it take to convince rural subsistence farming families to integrated amaranth into their crop production and diets?
- 2) What are the local, domestic, and international economics of amaranth, and can it be used to generate additional income for these farming

families?

CRS has put together a complete itinerary for our team, which includes meeting with a number of agricultural organizations in Guatemala City and the opportunity to spend time in local communities in San Marcos and Nebaj.

We departed from Notre Dame this afternoon and will spend the night in Chicago before departing for Guatemala early tomorrow morning!

Matthew Kudija
nd.edu/~mkudija

3/1/14 – Day 1

Left hotel at 5:30

little late but got on our flight to Newark

3/2/14 – Day 2

Watching a volcano erupt was not previously on my bucket list but today was unexpectedly both added and checked off. We got up early for the opportunity to hike Volcán Pacaya and were surprised to hear from our guide that we might not be able to because of eruptions that started that morning. Pacaya is one of several active volcanoes in Guatemala. We could see a giant plume of ash rising from the volcano as we drove closer.

(photo 1)

We hiked up as far as we could before being stopped by local police saying the parque nacional was closed due to the eruption, but that we could watch from the nearby clearing. We watched in amazement as ash continued to pour from the volcano, with red peeking through occasionally. From about 2 km away the eruption sounded surprisingly like ocean waves pounding on the shore. Kerri, our biologist and bird expert, let us watch through her binoculars. Zoomed in, we could clearly see lava spurting out behind the wall of ash, and rocks raining down out of the plume.

(photo 2)

We knew this wasn't necessarily an ordinary occurrence when the police officers started taking photos also, and we got a nice group shot with them (uzi included).

(photo 3)

We continued to Antigua for an afternoon of exploring. We met up with my friend Jess (ND '13) who is doing a year of service in Guatemala. We got lunch and she showed us around some of sights in Antigua, including Casa Santo Domingo which had beautiful art and ruins with sights of the other local volcano, Volcán Agua.

(photo 4)

3/3/14 – Day 3

This was our first day of formal work on the project with CRS, and started with a meeting at CRS headquarters in Guatemala City (which serves jointly as CRS headquarters for both Guatemala and all of Latin America & the Caribbean). Our discussion with CRS included security in Guatemala and our joint goals for our project.

We had some tasty amaranth snacks from Lula's Oven, a local startup focusing on health foods. This was followed by lunch at a restaurant that serves some amaranth, which has been harder to come by than we were anticipating. This afternoon we met with USAID, the aid arm of the United States government and a close CRS partner on many of their projects.

3/4/14 – Day 4

This morning was exceptionally helpful and interesting. We met in the morning with two representatives of AGEXPORT at their headquarters to discuss their work and their thoughts on amaranth. We had fun afterward all taking a group photo for their newsletter.

We had some time before lunch to stop at a couple of health stores (Organico and Super Verdura) to look at amaranth products. We had lunch at a cool little French restaurant.

This afternoon we met with Sheryl from P4P (a UN project). She was exceptionally passionate about her work and we had a great presentation from her as well as a very helpful Q&A session afterward.

We stopped at the grocery store (which included two armed guards at the entrance) to get sandwich making materials that I shared with David. Our team synthesis session was helpful with some great insights from Karla. After that I ate dinner with David and then spent the evening writing my vision reflection, working on IM, and FaceTimed Jordan for a few minutes before bed.

3/4/14 – Days 3–5

Our first three working days have been spent in Guatemala City meeting

with CRS and a number of other partner organizations. These discussions with experts have helped to confirm many of our assumptions, correct misconceptions, and generally focus our thinking in important ways to approach our upcoming time in the rural communities we are directly studying over the remainder of this week into next week. These meetings included:

Catholic Relief Services: Our initial meeting was a welcome opportunity to get to know our CRS colleagues in person after talking with them via Skype and email over the past two months. We discussed our agenda, project goals, and plan moving forward.

Lula's Oven: A small business, Lula's Oven produces healthy snacks aimed at the niche health food market in Guatemala City. They provided valuable information about amaranth's nutritional properties and market perception.

USAID: USAID gave us general information to help give context to the scope of our project in Guatemala, especially the scope of chronic malnutrition and information about public-private partnerships addressing this problem.

AGEXPORT: As a sort of chamber of commerce, AGEXPORT facilitates the relationship between buyers and local producers, with an emphasis on providing services to the local producers as they mature and seek to reach markets. Their focus on the entire value chain gave us valuable information as we seek to understand the entire amaranth value chain rural farmers would fit into.

UN World Food Program: This was a great opportunity to learn about UN food aid programs and their efforts to source this food locally. Furthermore, we learned a tremendous amount about the technical, social, and environmental aspects of Central American agriculture.

Chicakh: This is an organization that provides a wide range of local, organic products (including amaranth) sourced from organized rural farmers. This discussion was intensely focused on amaranth and methods for connecting rural farmers with domestic markets.

These meetings have provided us with much to think about. Some key insights that stand out at this point in our research include:

Community: Even with our focus on individual rural farming families, we have learned the importance of understanding the community they are a part of. This includes the importance of understanding the leadership of the governmental, economic, and social community organizations, as well as the importance of organizing small agriculture producers together to combine their production and facilitate relationships with markets.

Diversification: While our project is focused on evaluating the feasibility of amaranth for reducing malnutrition and increasing income among rural farming families, the importance of diversification of crops has been stressed numerous times. One great example of this is Coffee Rust (**Hemileia vastatrix**), a fungus that damages coffee crops and has devastated many small coffee producers in eastern Guatemala. Their complete reliance on coffee placed them in a precarious situation when that crop failed. While we have been asked to evaluate amaranth specifically, our analysis must always be in the context of the farming family's whole system.

Private sector: We have been pleased to learn about how the Guatemalan private sector has been involved in malnutrition reduction efforts. Being unaware of this beforehand, we will look to include private involvement in various levels of the amaranth value chain.

This morning our team went to Ash Wednesday mass at the Guatemala Cathedral (officially Catedral Primada Metropolitana de Santiago). Being white, blond, foreign, and clearly the tallest person in the congregation of easily several hundred, I stuck out like a sore thumb. We then spent some time exploring the markets near the central plaza.

Yesterday, we found some amaranth flour and seedless amaranth that is harvested for its leaves (bledo).
(photo 1)

Today our advisor Christine Cervenak of the Law School joined us, and we all enjoyed squeezing in the car together.
(photo 2)

3/9/14 – Days 6–7

Coming off several productive days in Guatemala City learning about amaranth from a variety of angles we went out into the field to see amaranth production firsthand. Departing early, we drove most of the day Thursday to Rabinal to stay with Qachuu Aloom, an organization of farmers that produces a number of crops for consumption and sale with a special focus on amaranth. Arriving just before dark, we were greeted with a presentation giving an overview of the organization's background and mission as well as a delicious Guatemalan dinner. Following a good night's sleep and an equally delicious Guatemalan breakfast Friday morning, we departed to visit some local farms.

(breakfast photo)

Our first of two farm visits was an introduction into the details of planting and cultivating. We were given an overview of how these farmers plant and irrigate their crops, assess and replant them as they mature, and make planting decisions as they rotate crops throughout the year. For instance, onions are planted in one bed. After growing to about 4–6" they are transferred to a new bed with greater spacing. Our team helped replant a bed of onions.

(planting photo)

Onions were just one of a number of crops planted in this small plot of about 1/2 hectare, and we were impressed with the level of crop diversification. Following our practical lesson, several other farmers joined us for a discussion and Q&A session. We appreciated this first opportunity to talk directly with the rural farmers we have been learning so much about over the past two months. Despite our careful research from afar and consultation with experts at CRS and other organizations, there is no substitute for direct conversations with these farmers.

(focus group photo)

We continued our conversations next door with a farmer who had the honor of showing us our first Guatemalan amaranth! Amaranth comes in a number of varieties and colors, and we were greeted with some bright orange amaranth stalks ready for harvest. He got a tarp, a bucket, and a screen sifter from nearby and we got a demonstration of how to harvest amaranth. He showed us how to detach the seed filled tops of the stalks from the plants, shake out the seeds, sift them, and separate the chaff from the actual amaranth seeds. We jumped in and all got to help process a small amount of amaranth, a process that takes about 5 days for his entire plot of about 660 square meters.

(amaranth photo)

He talked us through his whole amaranth planting, cultivating, harvesting, and selling process and we got some great data to include in our research. Qachuu Aloom has clearly demonstrated an ability to organize and support local farmers for amaranth production and we hope to implement some what we learned here as we evaluate the feasibility of amaranth in the western highlands.

Despite the great info we learned on this trip, it is important to keep in mind the fact that this is just one data point to include in our research, and that Qachuu Aloom is clearly putting their best foot forward. These two farming families are definitely operating on the upper end of the 400

members of their organization. Processing information we receive in interviews and visits presents the challenge of filtering positions from interests and understanding what we are told because those telling us might want us to hear it and what we might not be hearing. These are important lessons to keep in mind moving forward.

3/9/14 – Days 8–9

With a solid week of work complete, we took some time to relax and enjoy the incredible views of Lake Atitlán. We spent most of Saturday on the road and arrived in Panajachel mid-afternoon. This is one of the more frequently visited parts of the country and we spent a couple of hours walking around and taking in the town before dinner and a surprise thunderstorm.

(market photo)

Sunday morning I walked up for Mass at the local church. An MBA classmate from Guatemala kindly arranged for us to meet up with her parents at their lake house on Atitlán and we enjoyed meeting her family and relaxing. We kayaked, swam in the lake, and enjoyed having the afternoon off to relax.

(photos)

We hired a "chicken truck" to take us back to our hotel and all piled in the back for a fun ride.

(photo)

Since the teams are splitting up for the next two days to continue research in San Marcos and Nebaj, we spent a few hours this evening discussing what we know and what each team is planning to focus on moving forward. As our "one week answer" we believe CRS can explore partnerships with organizations such as Qachuu Aloom to implement their model for local amaranth production among organized groups of farmers in the San Marcos region. Our work over the next few days will give us our first detailed look at the San Marcos region the project is focused on and visit with an organization that had a less than successful amaranth project (Group 1), and visit with another successful amaranth growing organization (Group 2).

3/11/14 – Days 10–11

Our team was split into two groups for our last two days of field work. As part of Group 2 we visited with farmers of the Asociación

Kulb'aalib' Xe'chulub' in Nebaj, a farmer's association with a strong emphasis on amaranth. We had some challenges on our first day: our CRS colleague was ill and needed to stay behind, and the association didn't seem to be expecting us so it took awhile to help them to understand our project and why we were asking them questions about their work. As it turned out, had a productive afternoon learning about the association and its work with amaranth in the Quiché region.

The next morning we went into the field to visit with three farming families. The first was the most rural and rugged, with the family plot running steeply up the side of a mountain.

(lady at farm 1)

The last farm we visited was the most impressive we have seen. While just a family plot, they had a large variety of crops including amaranth, maize, wheat, beans, sugarcane, watermelon, onions, avocado and others.

(carolyn with amaranth)

After a long bumping drive to an adjacent community in Nebaj we visited with an organization affiliated with AGEXPORT. Again, AGEXPORT works to connect local farmers to international export markets. This organization has a threefold mission to promote education, nutrition, and economic development. In the spirit of the third aspect of their mission they have worked with AGEXPORT and the members of their association to produce sugar peas for export. This was a shining example of how connecting farmers to international markets can improve their livelihood.

Some key takeaways from our time in Nebaj include:

Feasibility of amaranth: amaranth is clearly a feasible crop for improving nutrition and providing income for rural Guatemalan farming families.

Data: we were able to get useful data on the costs and revenues of amaranth production and some technical information about how to best cultivate amaranth in this region.

Associations: discussions with the associations we have visited on this trip have demonstrated the importance of organizing local farmers to support both the nutritional and economic development aspects of this project. We have learned important lessons about the function and operation of these associations.

(amaranth field photo)

After our visits we were able to walk around the local market. Nebaj has a booming market and beautiful handmade knitting which forms the traditional Mayan apparel that most local women still wear.

(knit things)

3/13/14 – Day 12-13

drove back and worked on presentation

presented to CRS

3/14/14 – Day 14

Panama (GE)

Final Reflections

Reflections

- importance of community/relationships
- removing the glamour from travel
- efficiency (american economic) vs. everything these local people actually do in a given day
- being too busy for life
- taking time to be nice (customs officers)
- Their problems are our problems and we all have to be involved in each other's solutions (food, gender roles: discussion with Karen)
-