**Project Background**

The GHI team partnered with the Organization for the Development of the Indigenous Maya (ODIM) which works to improve the health and education of the Tz’utujil Maya people in the communities of San Juan and San Pablo, Lake Atitlán, Guatemala. Two previous GHI teams worked with ODIM, improving systems and processes and delivering trainings to ODIM staff and Community Health Workers (CHWs).

Due to a nutrition transition occurring in Guatemala, these communities suffer high prevalence of **type 2 diabetes, obesity**, and other ailments, many of which are linked to ecological factors. These factors include high availability and aggressive marketing of processed foods and drinks; low availability of clean drinking/bathing water; and lack of pesticide-free foods.

Given the close connections between natural and built environments and human disease, the desire of ODIM CHWs to explore these issues in more detail, and the individual team member backgrounds, the 2014 GHI team created workshops to teach CHWs appropriate subject matter and research methods. The workshops followed a **political ecology theoretical framework** on the interactions between ecology and human health (specifically in relation to diabetes and obesity).

**Objectives**

- Recruit 25 Community Health Workers (CHWs) from ODIM clinics
- Instruct nine workshops on research methods and environmental factors affecting diabetes and obesity
- Developed a program using Epi Info 7 based on the needs of the clinic to track disease prevalence and consults
- Created innovative hands-on learning experiences, including testing local produce and water for pesticide levels
- Through surveys and interviews of farmers, market customers, and purveyors of agricultural chemicals (n=115), the CHWs found out that:
  - Most respondents knew of organic methods and could name a comprehensive list of health and environmental benefits
  - Farmers perceived that organic methods were costly in both time and money, however a local farmer practicing organic, diversified methods claimed that this was a misconception
  - A vast majority of customers in the markets indicated that they were prepared to pay up to 25% more for organic produce
  - 35% of customers said they knew where to buy organic produce

**Activities**

- Recruited 25 Community Health Workers (CHWs) from ODIM clinics
- Instructed nine workshops on research methods and environmental factors affecting diabetes and obesity
- Created innovative hands-on learning experiences, including testing local produce and water for pesticide levels
- Worked with CHWs to develop research questions addressing environmental factors that affect the well-being of the community
- Presented the research findings at a community forum with other members of the community present to share their current work
- With the help of two San Juan CHWs, taught a one-day condensed workshop in Panajachel to medical students associated with the NGO Naturopathic Medicine for Global Health (NMGH)
- Developed a program using Epi Info 7 based on the needs of the clinic to track disease prevalence and consults
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**Hypotheses, Methodology and Results**

- The CHWs asked: *Why do more people not grow organic food?*
- They predicted that the factors preventing organic farming included:
  - H1: Lack of knowledge about the benefits of organic methods
  - H2: Perception of high cost and time needs of organic methods
  - H3: Lack of local demand for organic produce
- Through surveys and interviews of farmers, market customers, and purveyors of agricultural chemicals (n=115), the CHWs found out that:
  - * Most respondents knew of organic methods and could name a comprehensive list of health and environmental benefits
  - * Farmers perceived that organic methods were costly in both time and money, however a local farmer practicing organic, diversified methods claimed that this was a misconception
  - * A vast majority of customers in the markets indicated that they were prepared to pay up to 25% more for organic produce
  - * 35% of customers said they knew where to buy organic produce

**Reflections on Process**

**Giving up control** - Participatory research requires compromise and consensus building. It is messy by nature and requires one to give up control. The research design and data collection were not perfect, but.....

**Local insights** - Because the CHWs were trusted by the community and collected data in local Tz’utujil language, in less than two weeks, the CHWs were able to gain insights that a non-local researcher would struggle to obtain even through long-term ethnographic fieldwork.

**Inspiring future research** - The CHW findings that local, indigenous customers are willing to pay a premium for organic produce and that many already buy organic food will feed into the doctoral research of GHI team member Ioulia Fenton.

**Inspiring community leaders** - The GHI project’s biggest success was in inspiring local leaders:

- Based on the findings, Francisco (pictured right) proposed helping local farmers overcome barriers to organic production through training and workshops
- Seventeen year old Cecilia (pictured left) volunteered to share her GHI research experiences with NMGH medical students in

**Acknowledgements**

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