**A Field Guide to Community Based Adaptation**

**Example of Field Assignment 3, Chapter 3**

Tim Magee

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| **Text Box 3.1**  **Example of Field Assignment 3**  **Field Assignment 3. Step 1: Researching Scientific Climate Change Information**  **Part 1. Defining the climate change problem: assessing local climate change information online**  I defined my areas of interest as Guatemala, climate change impacts, changing temperature and precipitation, food security, and agriculture. I used various combinations of these terms within my Internet search engine to search for literature. There were quite a few papers discussing a range of CC challenges, but I focused only on those papers that specifically addressed my areas of interest above.  **Internet Search:** Are temperatures increasing in Guatemala due to climate change?  World Bank (2009) Guatemala Country Note: Climate Change Aspects in Agriculture. Online: Available HTTP: <http://siteresources.worldbank.org/INTLAC/Resources/Climate\_GuatemalaWeb.pdf> (accessed 12 April 2012).  **Summary.**  This study expects a median temperature increase of 3.0°C by the year 2050 and a reduction in precipitation during the normal rainy season, periods of drought and an intensification of heat waves with serious implications for agriculture. It is expected that evapo-transpiration will increase due to temperature increases and precipitation reduction resulting in the expansion of semi-arid areas. The study indicates that there could be decreases in the production of crops of up to 34 percent for corn and up to 66 percent for beans. It expects a reduction of superficial water flow of between 10 percent and 50 percent which along with the predicted temperature increases and precipitation reduction will result in a lower water supply for agricultural irrigation.  Lennox, J. (ed.) (2010) The Economics of Climate Change in Central America: Summary 2010.  Online. Available HTTP:  <http://www.eclac.org/cgi-bin/getProd.asp?xml=/publicaciones/xml/9/41809/P41809.xml&xsl=/mexico/tpl-i/p9f.xsl&base=/mexico/tpl/top-bottom.xslt> (accessed 12 April 2012).  **Summary.**  This study indicates that climate change could cost Central America at least half its gross domestic product by the end of this century as more extreme weather, lower crop yields and water shortages are expected.  The report warns that agriculture will be one of the hardest-hit sectors. "Climate change could significantly affect food security by reducing food production and curbing direct access to food among rural families, as well as leading to higher food prices."  The study predicts that water shortages will also cause falling production of the region's staple foods: maize, rice, beans, and coffee—a key export. These crops are particularly sensitive to rising temperatures and declining rainfall levels, the report says. An average reduction in rainfall levels for Central America of 10 to 28 percent is expected. In Guatemala, for example, the report forecasts that a 3.5 degree Celsius rise in temperature together with a 30 percent reduction in rainfall could lead to a 34 percent decline in maize production and 66 percent for beans.  Adaptation Fund (2010) Proposal for Guatemala. Online. Available HTTP: <<http://adaptation-fund.org/system/files/AFB.PPRC_.2.6%20Proposal%20for%20Guatemala.pdf>> (accessed 12 April 2012).  **Summary.**  Guatemala faces many hazards related to climate variability and climate change. Projections show increases in temperature, decreases in total mean precipitation, increases in the frequency of extreme precipitation events, as well as in the frequency and intensity of extreme climatic events. 10 percent of Guatemalan territory faces risk of drought and more than 3,000 communities are prone to flooding. |

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| **Text Box 3.2**  **Field Assignment 3. Step 2: Assessing Risk and Summarizing Local Scientific Climate Change Information**  **Activity 1: Compile the information** | | | |
| **Table 3.2. Course project example: climate-related stimuli, changes in stimuli, and projected impacts**  Adapted from Kropp, Scholz (2009) | | | |
| **Climate Change Stimuli** | **Projections of Changes in Stimuli** | **Projected Negative Impacts** | **Source of Information** |
| Temperature | Median temperature increase of 3.0°C by the year 2050 and an increase in heat waves | Serious implications for agriculture, an expansion of semi-arid areas; a reduction in food production leading to a reduction in food security; a curbing of direct access to food among rural families; higher food prices | World Bank (2009) Guatemala Country Note: Climate Change Aspects in Agriculture  Lennox, J. (ed.) (2010) The Economics of Climate Change in Central America: Summary 2010. : United Nations ECLAC Report |
| Precipitation | Decrease in precipitation of 9 percent and an increase in drought periods by 2050  Increases in the frequency of extreme precipitation events, as well as in the frequency and intensity of extreme climatic events | Falling production of the region's staple foods including maize, rice, beans, and coffee—Guatemala’s chief export; decreases in the production of maize of up to 34 percent; decreases in the production of beans of up to 66 percent | World Bank (2009) Guatemala Country Note: Climate Change Aspects in Agriculture  Lennox, J. (ed.) (2010) The Economics of Climate Change in Central America: Summary 2010. : United Nations ECLAC Report  The Adaptation Fund (2010) Proposal for Guatemala. |
| Superficial water flow (surface water) | Reduction of between 10 and 50 percent | Lower water supply for irrigation in agriculture | World Bank (2009) Guatemala Country Note: Climate Change Aspects in Agriculture |
| Changing rain patterns | Unpredictable start of rainy season; periods of drought in the middle of the rainy season | Subsistence crops providing declining yields leading to widespread malnutrition and increasing poverty | Tim Magee  Climate Change Consultant  Guatemala City |

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