**A Field Guide to Community Based Adaptation**

**Example of Field Assignment 4, Chapter 4**

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| **Text Box 4.1****Course Project Example****Field Assignment 4. Step 1: Comparing Local and Scientific Climate Knowledge****Activity 1. What are the typical near-term and long-term CC challenges that your research from last week revealed?**I reviewed the climate related stimuli and projected impacts chart from Field Assignment 3 and summarized the information below.**Summary of near-term CC challenges:** The near-term climate change challenges in Guatemala are an increasing number of torrential tropical storms and the fact that the dates for the rainy season—which traditionally began in mid-May and ended in mid-October—are no longer as predictable. This makes it difficult for farmers to decide when to plant. The seasonal rains are also increasingly variable and there are dry periods within the normal rainy season which affect the level of crop production. These challenges reduce water supplies, lead to declining quality and quantity of crop yields, reduce family incomes and food security, and increase food prices and chronic malnutrition in rural areas. **Near-term adverse climate change related stimuli:*** unpredictable dates for the beginning and end of the rainy season
* decreasing precipitation
* extended dry periods during the rainy season
* an increasing number of increasing precipitation events and extreme climatic events

**Summary of long-term CC challenges:**My research from Chapter 3 revealed long-term climate change challenges over the next 40 years. Scientists are expecting a median temperature increase of 3.0° C, a decrease in precipitation of 9%, and the reduction of surface water of between 10% and 50%. These complications will lead to an expansion of semi arid areas, a further reduction in food production, higher food prices, and less water for agricultural irrigation—contributing to an even greater reduction in food security, and an increase in malnutrition and extreme poverty.**Long-term projected climate change related stimuli:*** median temperature increase of 3°C
* 9% decrease in precipitation
* 10% to 50% reduction in surface water
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| **Text Box 4.2****Course Project Example****Field Assignment 4. Step 1: Comparing Local and Scientific Climate Knowledge** |
| **Table 4.2. Course project example: comparison of local knowledge with scientific information** |
| **Field Assignment 2 Project Outline** | **Summary of climate related stimuli and projected impacts** |
| **Problems:*** Chronic diarrhea in children
* Chronic under-nutrition

**New problem identified in Field Assignment 2 exercises*** Insufficient income from agriculture

**Causes:*** Lack of knowledge of health, hygiene and family nutrition
* Overall shortage of food and specifically for the four months preceding the corn harvest

**New underlying cause related to climate change** * Unpredictable dates for the start and end of the rainy season, intermittent drought and erratic rainfall during the rainy season, flooding and extreme weather events have reduced crop harvests and access to water
 | **Near-term adverse climate change related stimuli:*** unpredictable dates for the beginning and end of the rainy season
* decreasing precipitation
* extended drought periods during the rainy season
* an increasing frequency of extreme precipitation events and an increase in frequency and intensity of extreme climatic events
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| **Text Box 4.3****Course Project Example****Field Assignment 4. Step 1: Comparing Local and Scientific Climate Knowledge**The scientific climate stimuli are in accord with the CBA challenges identified by the community in Chapter 2 and are in support of their traditional climate knowledge.These stimuli also represent/support underlying causes for other traditional development challenges in the outline: food shortages, insufficient agricultural income, and chronic malnutrition. |

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| **Text Box 4.4****Course Project Example****Field Assignment 4. Step 2: Modifying the Project Outline Based on New Scientific Information.****Activity 1. Do You need to modify your problems and causes based upon what you've learned?****Underlying cause related to climate change** * Unpredictable dates for the start and end of the rainy season, intermittent drought and erratic rainfall during the rainy season, flooding and extreme weather events have reduced crop harvests and access to water

Last chapter’s scientific research showed that near-term climate stimuli and impacts concur with climate change causes in the project outline—so I don't need to modify that underlying cause. The CBA cause in the project outline does not take into account a plan to address the long-term challenges. A long-term plan would need to be developed, but I believe that that is outside of the scope of this particular project. Developing a long term plan would be a good idea for a second, follow-up project.However, in anticipation of developing this long-term plan I would like to add a new underlying cause to the project outline. This will create a bridge from this project to the follow-up project.* A lack of knowledge of climate change and its near and long-term impacts

**My newly modified and final project outline:****Local knowledge, community identified need combined with scientific knowledge:****Problems:*** Chronic diarrhea in children
* Chronic under-nutrition
* Insufficient income from agriculture

**Underlying Causes:*** Lack of knowledge of health, hygiene and nutrition
* Overall shortage of food and specifically for the four months preceding the corn harvest

**Underlying causes related to climate change** * Unpredictable dates for the start and end of the rainy season, intermittent drought and erratic rainfall during the rainy season, flooding and extreme weather events have reduced crop harvests and access to water

 **New underlying cause based on long-term climate risks*** A lack of knowledge of climate change and its near and long-term impacts

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| **Text Box 4.5****Course Project Example****Activity 1. Accurately define your local climate change context**100 subsistence farm families in four villages of Comalapa, Guatemala, are suffering from reduced crop harvests and access to water due to unpredictable dates for the start and end of the rainy season, intermittent drought and erratic rainfall during the rainy season, flooding and extreme weather events—all exacerbated by a lack of knowledge of climate change and its near and long-term impacts. These lead to a reduction in food security, increased malnutrition, and a decrease in agricultural income. These climate change challenges will intensify over the next 40 years; without adopting adaptation strategies the community's suffering will increase. |

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| **Text Box 4.6****Course Project Example****Problem statement from Field Assignment 2**300 small children from 100 families in four Guatemalan villages are frequently ill with chronic diarrhea caused by little knowledge of health and hygiene, are chronically undernourished caused by little knowledge of nutrition and less than 12 months of food reserves. Their families suffer from insufficient agricultural income from reduced crop harvests and access to water due to unpredictable dates for the start and end of the rainy season, intermittent drought and erratic rainfall during the rainy season, flooding and extreme weather events. These challenges contribute to stunting and restrict the children's ability to attend and concentrate in school, leading to a reduction in their ability to develop and prosper as adults. These challenges also reduce the ability of adults to lead the productive, meaningful, prosperous lives they need to leave the cycle of poverty and contribute to the development of their communities.**Local climate change context from Activity 1**100 subsistence farm families in four villages of Comalapa, Guatemala, are suffering from reduced crop harvests and access to water due to unpredictable dates for the start and end of the rainy season, intermittent drought and erratic rainfall during the rainy season, flooding and extreme weather events—all exacerbated by a lack of knowledge of climate change and its near and long-term impacts. These lead to a reduction in food security, increased malnutrition, and a decrease in agricultural income. These climate change challenges will intensify over the next 40 years; without adopting adaptation strategies the community's suffering will increase. |

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| **Text Box 4.7****Course Project Example****Revised Problem Statement incorporating the community’s climate change context**300 small children from 100 families in four Guatemalan villages are frequently ill with chronic diarrhea caused by little knowledge of health and hygiene and are chronically undernourished caused by little knowledge of nutrition and less than 12 months of food reserves. Their families suffer from insufficient agricultural income from reduced crop harvests and access to water due to unpredictable dates for the start and end of the rainy season, intermittent drought and erratic rainfall during the rainy season, flooding and extreme weather events—all exacerbated by a lack of knowledge of climate change and its near and long-term impacts. These challenges contribute to stunting and restrict the ability of children to attend and concentrate in school. They also reduce the ability of adults to lead the productive, meaningful, prosperous lives they need to leave the cycle of poverty and contribute to the development of their communities. **Revised project outline that includes community identified need combined with local and scientific climate change knowledge:****Problems:*** Chronic diarrhea in children
* Chronic under-nutrition
* Insufficient income from agriculture

**Underlying Causes:*** Lack of knowledge of health, hygiene and nutrition
* Overall shortage of food and specifically for the four months preceding the corn harvest

**Underlying causes related to climate change** * Unpredictable dates for the start and end of the rainy season, intermittent drought and erratic rainfall during the rainy season, flooding and extreme weather events have reduced crop harvests and access to water
* A lack of knowledge of climate change and its near and long-term impacts
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