

**Student Title:** Magee, Tim OL 341 Assignment 3  
**Student Date:** February 4, 2011  
**Magee Example Project OL 341 Assignment 3**  
**Online Learning:** OL 341 From the Ground Up for Adaptation  
**Center for Sustainable Development:** <http://www.csd-i.org/>

**Use this Document as your template for your assignment.**

### **Assignment 3. Will your theory of a solution work?**

I focused on finding scientific papers on the following three of my activities to see if they had shown evidence of solving my project challenge. I searched through Google and the 'Links to Development Sites' listed on the menu to the left. Although I have noted several scientific papers for each activity, the homework assignment only asks you to find one paper per activity.

#### **Activity 1**

##### **Family gardens and small animal production for increasing food security and nutrition**

I used the Links to Development Sites listed on the menu to the left.

1. Improving Diet Quality and Micronutrient Nutrition: Homestead Food Production in Bangladesh; IFPRI; Lora Iannotti, Kenda Cunningham, Marie Ruel.

<http://www.ifpri.org/sites/default/files/publications/ifpridp00928.pdf>

2. Effect of nutrition improvement project on morbidity from infectious diseases in preschool children in Vietnam: comparison with control commune; R M English, J C Badcock, Tu Giay, Tu Ngu, AM Waters, S A Bennett

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2127738/pdf/9374884.pdf?tool=pmcentrez>

3. Home gardens key to improved nutritional well-being; L. Bhattacharjee, S. Phithayaphone and B.K. Nandi

<ftp://ftp.fao.org/docrep/fao/meeting/011/ag101e/ag101e00.pdf>

##### **Summary Paragraph:**

These studies show that home gardens can provide 60% of leafy vegetables, and between 20% and 50% of all fruits and vegetables consumed by households. Home gardening families as a rule spends less on food than non-gardening families. Improved nutrition boosts the body's immune system protecting children against disease and can reduce diarrheal infections from 18% of the children to 5% of the children. One study showed that after six months of a vegetable garden project, the number of malnourished children decreased from 23% in the communities to 16% and the number of severely malnourished children decreased from 9.5% to 2%. The studies all emphasized that the vegetable gardens needed to be combined with nutrition education so that mothers could make sure that they were growing a variety of vegetables and fruit rich in vitamins and minerals, especially vitamin A. The gardens were also a good source of protein through eggs and small animal production. The studies also concluded that even a small garden (25 sq. meters) can have a positive impact on nutrition, health and increased incomes.

#### **Activity 2**

##### **Hand washing for improving children's health.**

Key words: What works in reducing diarrhea in developing nations?

In Google I found:

1. Water, sanitation and hygiene interventions to combat childhood diarrhoea in developing countries. 3ie Synthetic Review 001, New Delhi. Hugh Waddington, Birte Snilstveit, Howard White, and Lorna Fewtrell.

[http://www.3ieimpact.org/admin/pdfs\\_synthetic2/1.pdf](http://www.3ieimpact.org/admin/pdfs_synthetic2/1.pdf)

2. What Works in Fighting Diarrheal Diseases in Developing Countries? Alix Peterson Zwane and Michael Kremer.

<http://poverty-action.org/sites/default/files/wbro.pdf>

##### **Summary Paragraph:**

Randomized control studies have shown that hand washing can reduce diarrhea in children in developing nations by between 30% and 53%. Hands can pick up pathogens that cause diarrhea in the latrine, by washing hands in infected water, by touching another person's hands, and by touching the ground where someone has tracked fecal matter. Hand washing with soap is the number one prevention against the spread of person-to-person infection. Hand washing reduces the spread of germs that cause diarrhea, respiratory illness, and skin infection.

#### **Activity 3**

##### **Point of use water treatment for improving children's health**

Key words:

A. What works in reducing diarrhea in developing nations?

B. Point of use water treatment in reducing diarrhea in developing nations?

1. Reducing diarrhea through the use of household-based ceramic water filters: a randomized, controlled trial in rural Bolivia; THOMAS F. CLASEN, JOSEPH BROWN, SIMON COLLIN, OSCAR SUNTURA, AND SANDY CAIRCROSS

<http://www.ajtmh.org/cgi/reprint/70/6/651>

2. Point of use water treatment in reducing diarrhea in developing nations; Daniele S. Lantagne, Robert Quick, and Eric D. Mintz.

### 3. SODIS Scientific Publications

[http://www.sodis.ch/methode/forschung/publikationen/index\\_EN#health](http://www.sodis.ch/methode/forschung/publikationen/index_EN#health)

#### Summary Paragraph:

A range of randomized studies indicate that ceramic filters reduce diarrhea in treatment groups by 40% to 50% over control groups that aren't using the filters. This is competitive with other interventions such as sanitation programs and hand washing. Since the clean water is used right out of the filter for drinking or cooking, there is less of a chance of re-contamination than water brought from a well in a dirty container, or contaminated by dirty hands retrieving water from a bucket. The SODIS Water Treatment System improves the microbiological quality of drinking water by using both solar UV-A radiation and temperature to inactivate pathogens causing diarrhea. The SODIS system will reduce diarrhea in children by between 25% and 75%.



**Adaptation.** I was able to find several links to scientific documents that related to my small-scale farmer adaptation programs from my project outline.

Katalysis: helping Andean farmers adapt to climate change. Sherwood, S., Bentley, J

Pp. 65-75 IIED: PLA Community-Based Adaptation to Climate Change

<http://www.iied.org/pubs/pdfs/14573IIED.pdf>

This paper discusses the benefits of using farmer field schools in which farmers share their experience and strengthen their abilities at adaptation through learning experiments, and identify ways of improving agriculture through group problem-solving. The paper discusses improving management of organic matter and mulching by making a relatively small investment into being, Drip tape, manure, and the creative use of plants and animals in order to transform their farms from a desert wasteland into an oasis in 18 months. It also discusses the importance of water management because communities suffer from both drought and floods at different times of the year. This paper discusses 30 activities for water management related themes: water in the home; water on a farm; watershed in the community; and water in the world and global warming.

IFPRI: Understanding Farmers' Perceptions and Adaptations to Climate Change and Variability

[http://www.ifpri.org/sites/default/files/publications/rb15\\_08.pdf](http://www.ifpri.org/sites/default/files/publications/rb15_08.pdf)

This paper discusses how a farmer's ability to perceive climate change is a key precondition for their choice to adapt. It discusses reasons why a farmer may choose to incorporate adaptation activities into their farms and some of the activities which they did incorporate such as: planting different crops, changing varieties, changing planting dates, increasing irrigation, diversifying crops, changing the amount of land grazed or under cultivation, and supplementing livestock feed. The paper concludes by stating that greater investments in smart irrigation and the promotion of efficient water use are needed.

IFPRI: Are Soil and Water Conservation Technologies a Buffer Against Production Risk in the Face of Climate Change? Insights from Ethiopia.

[http://www.ifpri.org/sites/default/files/publications/rb15\\_17.pdf](http://www.ifpri.org/sites/default/files/publications/rb15_17.pdf)

Possibly the best paper that I found this one that gets into discussions about which soil and water conservation technologies are the most appropriate and have the greatest impact in which geographic regions that they are used in—such as areas with low rainfall versus areas with high rainfall. It gets into detail about using bunds and grass strips for containing water, waterways, shade trees, contours, the use of traditional versus improved seed, irrigation, and a combination of fertilizer, improved seed, and irrigation.



#### Facebook Posting.

1 "Liked" the CSDi Facebook page.

2. I then posted a link to the course (I could have posted a link to the adaptation group of the development community, or to one of the scientific documents above that I used in this assignment) and wrote and posted this:

Do any of you have resources that could help me in the development of my project—including links to websites or scientific papers that would help me find intervention activities that I could use in my project, or links to sites where I can download how-to field guides or manuals on implementing these activities with my community?

<http://www.csd-i.org/ol-341-adapting-climate-change/>

100 subsistence farm families in the highlands of Guatemala suffer from reduced crop harvests due to extreme weather, an unpredictable rainy season, and extended periods of drought leading to a reduction of food security, increased malnutrition, and increased poverty.