

To: CCSF Directors  
From: Monroe Weber-Shirk  
Re: AguaClara: Preparing for Multidimensional Scale-up

### **Attendees**

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### **Notes from discussion:**

#### **Watershed and regional issues**

- 1) Water rights should be explored prior to facility construction
- 2) GIS mapping could be used to determine global regions that are appropriate for or that need surface water treatment
- 3) What are the watershed management strategies to reduce the level of contamination that must be treated?
- 4) Is fuel consumption for boiling water reduced?

#### **Technology impact evaluation**

- 1) The health and economic impact of the addition of an AguaClara water treatment plant to a community should be studied and documented to provide a basis for investment in the technology
- 2) The demand for water may increase when the water quality is improved. In particular there was interest in stream ecology impacts of municipal water supply
- 3) Governance plays a key role in the success of the intervention. The 5 existing sites provide the opportunity to begin to evaluate the role of governance.
- 4) The impact of safe municipal drinking water on equity should be evaluated.
- 5) Roll-out of the technology could be randomized to facilitate impact evaluation.

#### **Funding and Collaboration Opportunities**

- 1) NSF program - Dynamics of Coupled Natural and Human Systems (CNH)  
[http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=13681](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13681)
- 2) CCSF – AVF
- 3) StART program

- 4) MCC – especially chat with Jolyne Sanjak (<http://www.mcc.gov/mcc/about/execprofiles/bio-sanjak-jolyne.shtml>), who has worked extensively in Central America and will likely find this project interesting,
- 5) Peace Corps – talk to Jim Haldeman in IP-CALS about prospective partnership with Peace Corps through the MPS-Peace Corps program ,
- 6) CARE – visit with Kevin Henry when he comes here March 4-5

There seemed to be real interest in developing some sort of impact evaluation of AguaClara (<https://confluence.cornell.edu/display/AGUACLARA/Home/>), both impact to date in the established sites in Honduras as well as development of a rigorous monitoring and impact evaluation strategy to be deployed as new facilities are developed. The former could perhaps provide preliminary evidence on the association between introduction of AguaClara municipal water treatment facilities in small towns and (i) health and labor productivity effects (e.g., reduction in diarrheal disease episodes, days lost at school or work, weight-for-height measures of young children), (ii) prospective environmental effects (e.g., water use and any associated disruption in riparian ecology, fuelwood harvesting and deforestation rates). Separately, there seem big questions about the design of the financing of capital and operating costs, including what willingness-to-pay looks like for clean water and how that might be affected by exposure to AguaClara and of the governance of the system.

The evaluation of the impact of the five established AguaClara sites could be done using a combination of (i) GIS analysis to identify quasi-control communities matched on suitability of the technology (e.g., surface water availability, existence of piped infrastructure, etc.) , and (ii) survey-based social science evaluation using matching estimator (or related) techniques, perhaps coupled with more qualitative case studies or matched transect studies of environmental effects. Findings from such a study could be used to inform the design and grant proposals for a more serious randomized roll-out of AguaClara with baseline assessments and then ongoing monitoring and assessment to generate more rigorous evidence of the causal effects of AguaClara on development and environment variables. The initial surveys could presumably include a module employing nonmarket valuation techniques to establish a bit more clearly willingness-to-pay for clean water and how it varies with community and household/individual characteristics. Those results could inform future financing and governance designs.

As a next step we are organizing a meeting of interested faculty/staff to define research objectives, strategy, and funding sources.