

In Partial Fulfillment of the Requirements for the Degree of

Master of Science

Aaron Redman

Will defend his thesis

Transitioning Towards Sustainable Cooking Systems: With a Case Study from Rural El Salvador

Abstract

Over 80% of rural residents in the developing world utilize biomass as their principal fuel, with serious consequences for their health, climate change, household economics and personal well-being. This problem requires a Sustainability approach, so this thesis brings together several theories- transition management, socio-technical regimes, diffusion and livelihoods - to create a framework. A deep literature review of biomass cooking was conducted and fieldwork was carried out during the summer of 2009 in the village of La Comunidad, El Salvador. Over forty interviews were completed, principally with households utilizing an improved wood-burning cookstove (ICS). Based on the literature and the fieldwork, a Vision for a Sustainable Cooking System is developed, which outlines goals for health, climate change, cost, household opportunity costs and the cooking experience.

Strategies for achieving this vision are examined next. For several reasons, modern fuels such as electricity and gas (LPG) do not appear likely strategies for achieving the Sustainable Vision. Another strategy, efficient, biomass-burning stoves appears to have potential, but its viability is still largely unverified. This thesis focuses on an ICS known as the Justa, which was disseminated in La Comunidad in 2007. Using the diffusion framework the adoption of the Justa ICS in this community is examined. The Justa has been successfully adopted and not a single household has become disenchanted and abandoned it, but it has not reached a critical mass, where its spread will be rapid and self-sustaining. The decision process and other variables which influenced the adoption of the Justa are scrutinized. This work yields several possibilities for enhancing the transition to a Sustainable cooking system.

It has long been assumed that households will switch completely to modern fuels, once given the means and the opportunity. My fieldwork in El Salvador

confirms what other researchers have begun to argue, that households actually stack fuels and stoves, rather than switching between them. This is not a transitory phase and studying it reveals important information about household preferences, strategies and constraints. This phenomenon suggests that the Sustainable Vision can only be achieved through a stacking of cooking technologies, not with just one.

Monday June 7, 2010
10:00 a.m.
GIOS 481

Faculty, students, and the general public are invited.

Supervisory Committee:

Dr. Aaron Golub (Chair)
Dr. Hallie Eakin (Member)
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