Community Managed Rural Water Supply Systems in the Dominican Republic: Assessment of Sustainability of Systems Built by the National Institute of Potable Water and Peace Corps, Dominican Republic

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In the Dominican Republic economic growth in the past twenty years has not yielded sufficient improvement in access to drinking water services, especially in rural areas where 1.5 million people do not have access to an improved water source (WHO, 2006). Worldwide, strategic development planning in the rural water sector has focused on participatory processes and the use of demand filters to ensure that service levels match community commitment to post-project operation and maintenance. However studies have concluded that an alarmingly high percentage of drinking water systems (20-50%) do not provide service at the design levels and/or fail altogether (up to 90%): BNWP (2009), Annis (2006), and Reents (2003).World Bank, USAID, NGOs, and private consultants have invested significant resources in an effort to determine what components make up an "enabling environment" for sustainable community management of rural water systems (RWS). Research has identified an array of critical factors, internal and external to the community, which affect long term sustainability of water services. Different frameworks have been proposed in order to better understand the linkages between individual factors and sustainability of service.

This research proposes a Sustainability Analysis Tool to evaluate the sustainability of RWS, adapted from previous relevant work in the field to reflect the realities in the Dominican Republic. It can be used as a diagnostic tool for government entities and development organizations to characterize the needs of specific communities and identify weaknesses in existing training regimes or support mechanisms. The framework utilizes eight indicators in three categories (Organization/Management, Financial Administration, and Technical Service). Nineteen independent variables are measured resulting in a score of sustainability likely (SL), possible (SP), or unlikely (SU) for each of the eight indicators. Thresholds are based upon benchmarks from the DR and around the world, primary data collected during the research, and the author's 32 months of field experience. A final sustainability score is calculated using weighting factors for each indicator, derived from Lockwood (2003).

The framework was tested using a statistically representative geographically stratified random sample of 61 water systems built in the DR by initiatives of the National Institute of Potable Water (INAPA) and Peace Corps. The results concluded that 23% of sample systems are likely to be sustainable in the long term, 59% are possibly sustainable, and for 18% it is unlikely that the community will be able to overcome any significant challenge. Communities that were scored as unlikely sustainable perform poorly in participation, financial durability, and governance while the highest scores were for system function and repair service.

The Sustainability Analysis Tool results are verified by INAPA and PC reports, evaluations, and database information, as well as, field observations and primary data collected during the surveys. Future research will analyze the nature and magnitude of relationships between key factors and the

sustainability score defined by the tool. Factors include: gender participation, legal status of water committees, plumber/operator remuneration, demand responsiveness, and post construction support methodologies, and project design criteria.