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Project Document

Understanding the Water-Health Nexus: Perceived Local Linkages between Water, Environment and Health

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Expected Duration: 5 years (2009 – 2013)

Rationale

Access to safe water is a key determinant of population and public health, particularly in low income countries. Contamination from industrial, agricultural and primarily human waste continues to threaten both human and ecosystem health in many parts of the world. Further, it is now widely recognized that the primary determinant for addressing the issues of global poverty is the provision of safe water; access to safe water enhances the potential for educational opportunities (particularly for girls) and facilitates participation in local community economic development. Water-related diseases associated with contamination are many: diarrhoea, cholera, typhoid, shigella, polio, meningitis, and hepatitis A and E. Children and women are most severely and directly impacted by this contamination, due to physical vulnerability and exposure hence this project will help improve the quality of life in general for the whole community but specifically for children and women. In many cases, these communities are solely dependent on lake water for drinking, fish (source of income and also food, nourishment and health) and other household uses. Understanding the relationship between drinking water and good health is vital to population and public health, as access to safe drinking water is a cornerstone of a healthy population. Moreover, without an understanding of the social, political, cultural, historical and economic contexts within which humans live, work and play, sustainable change in human behaviour is not possible. This applies to a myriad of issues, including global access to safe water and sanitation. According to worldwide NGOs such as UNICEF, access to water and sanitation is NOT an issue of technology because the technology is available - rather, it is a matter of changing human behaviour (UNICEF 2008).

Thus, the purpose of the initiative is:

- To bring together the experience of partner institutes in Canada, Africa and elsewhere to understand the knowledge, attitudes, practices and perceptions of local communities around water and health;
- To use this information to develop an educational intervention that will help raise awareness of water-health links in local communities;
- To evaluate those interventions so the learnings can be shared with other communities
- To create sustainable development conditions for the people of East Africa by directly addressing water-health linkages in an integrated and effective manner;

- To understand the decision making process around solutions (safe water provisioning knowledgebase).

Project Summary

This initiative addresses a very hard question related to understanding human knowledge, attitudes and practices around water and sanitation, with a focus on sustainable behaviour change linked to survival with respect to health and wellbeing in rural, remote and marginalized communities in Kenya, along the shores of Lake Victoria. In so doing, the project brings particular emphasis to the roles of women and girls in society, the burden of water provision in rural, remote and marginalized communities, and the opportunity costs associated with this activity, particularly access to education and time spent caring for the sick. For example, UNICEF reports that in most developing countries, less than one-quarter of girls go on to higher education (UNICEF 2008). Indeed, it is no longer disputed that the primary route to solving the problem of poverty in the world is through the provision of safe water. When safe water and adequate sanitation are available, the result is: improved household health; substantial reductions in the amount of time and effort required to collect water and undertake sanitation related activities further enhancing the time available for tending to crops and livestock, improved food preparation, school attendance, and an opportunity to participate in the local economy, all mechanisms which work toward breaking the cycle of poverty (Schuster-Wallace et al., 2008). Ghandi himself gave several public speeches on the importance of sanitation (Chowdhry 2003).

The initial phase of the research program used a community-centred, mixed methods approach to understanding. Engagement of local people is essential to finding sustainable solutions and increasing the probability of sustainable change (Schuster-Wallace et al., 2008). The involvement of women in particular has been demonstrated to improve the success of project outcomes (Chattopadhyay and Duflo 2004). Further, it is essential – when attempting to understand a complex ecosystem – to engage a mixed methods approach that blends epistemologies (Waltner-Toews and Kay, 2005). As such, community mapping data and photo voice data were integrated with quantitative survey and qualitative interview data across a range of levels (individual, household community) in order to build a comprehensive picture of what is happening in a community and to attempt to find out why. Community mapping techniques were used in order to involve community members in establishing where problem areas might be located. These techniques have been applied successfully in a number of urban communities in Asia and Africa. While they have been used in development planning, more recently they have been used as a tool for community mobilization and empowerment (Glockner et al., 2004). We employed this technique in rural areas in Kenya so that community members come to understand their situation better and hence can conceptualize a process of change. Attributes mapped included: location of permanent or temporary latrines and water sources; layout of houses and lanes; boundaries; drainage systems; status of land; locations of small business; and, infrastructure such as schools and health clinics. As part of the community mapping process, surveys were administered with heads of household in order to collect basic demographic data as well as health and educational status, along with data regarding access to water and sanitation facilities. In depth interviews with key community stakeholders were conducted to collect information regarding knowledge, attitudes, beliefs and practices around water and sanitation. The initiative undertook preliminary work in one village in rural Kenya in order to inform the development of a larger scale multi-year proposal that will address additional communities, along with objectives 2 and 3. Four additional communities in Kenya, Uganda and Tanzania have been identified as case studies for the continuing project, which will replicate methods undertaken in the first phase to understand the issues, contexts and perceptions within each

community with respect to water, environment and health and continue to engage communities in developing interventions and evaluating effectiveness and sustainability.

In all cases, community members will be trained to work with the researchers to undertake data collection, both building local capacity as well as allowing for some economic gain on the part of the community. Focus has also shifted slightly to incorporate community and social cohesion into the project, as it became clear during the initial phase that this is essential for project sustainability.

Partnering Institutions

Fleming College (CAWT)
 Kenya Medical Research Institute
 Lake Victoria Basin Commission
 McMaster University
 Rotary (Hamilton and Kisumu)
 SANA International
 Uganda Christian University
 University of Waterloo

Project Workplan

Timeline	Task
Apr – Jul 09	synthesis of existing literature (both peer reviewed and agency/government reports) related to community-based initiatives undertaken to effect behaviour change around water and sanitation in rural, remote, or marginalized communities. COMPLETE
May 09	planning meeting and reconnaissance activities to be undertaken with key stakeholders in Kisumu, Kenya in order to operationalize the relevant program activities. COMPLETE
Sep – Oct 09	McMaster graduate student will be deployed to the pilot community to work alongside a Kenyan graduate student under the supervision of Dr Karanja in order to undertake interviewer training and data collection in one community in rural Kenya on the shores of Lake Victoria. COMPLETE
Nov 09 – Sep 10	Data analysis and dissemination COMPLETE
Oct 10 – Feb 11	Evaluate the findings from the pilot project in order to develop and several additional community interventions in Tanzania and Uganda. ONGOING

Jan 2011	Development of a subsequent proposal for multi-year funding of the full program of research for submission in the fall of 2011 ONGOING
Mar 11 – Dec 12	Undertake several additional community interventions in Tanzania and Uganda.
Nov 12 – Feb 13	Evaluate the effectiveness and impacts of the educational interventions in the communities studied.
Mar 13 – Sep 13	Disseminate the learnings to a range of stakeholders and audiences including policy makers as well as conventional UN channels of dissemination

Project Objectives

1. To investigate the knowledge, attitudes and practices related to water and sanitation in rural, remote and marginalized communities on the shores of Lake Victoria in Kenya;
2. To undertake, alongside the local community, an exercise in affecting change;
3. To evaluate the impacts of the intervention on the knowledge, attitudes and practices of local communities.

Outcomes

The key outcome will be a better informed population with respect to the linkages between water quality, water contamination and health. In turn, this informed population will be characterized by better health and better economic conditions.

Monitoring and evaluation

UNU-INWEH has a long-standing network of project partners in East Africa. As a result, we will continue to monitor and evaluate capacity building activities in the project communities on an on-going basis.

Outputs	Indicators
1. Communities targeted for study and intervention	Number of communities and individuals targeted
2. A community based public education and outreach program that can be transferred to other areas outside of East Africa.	Number of outreach activities and public education programs Number of community members reached

Assumptions, Risks and Risk Management

The success of the larger project will depend upon the flexibility in the research framework and allocation of funds. Communities are very interested in being involved in the project, but the methods employed can uncover unexpected underlying issues that need to be addressed. This is the case in the original community case study, where it became clear that the community was not cohesive enough to undertake a large sustainable water and sanitation intervention. Efforts have focused on facilitating community cohesion through small scale projects prior to developing a significant intervention. It has certainly been advantageous to undertake the smaller scale project in order to identify and adjust to unforeseen issues.

Project Status

An initial planning meeting was held in Kisumu, Kenya May 2009. During this time, the community of Usoma was chosen as a pilot location. Morgan Levison, a graduate student (MA) undertook in depth interviews and focus groups in the community over a 6 week period in September 2009. In addition, Morgan undertook community mapping, photo voice, GPS validation of key locations and water quality sampling of identified drinking water sources. She successfully defended her thesis in September 2010. We revisited Usoma in June 2010 to give back the findings as well as to explore opportunities to replicate the work in Il Ngwesi, a Maasai community north of Nairobi. Two Water Without Borders Graduate students will focus on Il Ngwesi for their theses, undertaking a field season in September 2011.

References

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