

# SAFE WATER PROVISIONING KNOWLEDGEBASE FOR RURAL, REMOTE AND OTHERWISE MARGINALIZED COMMUNITIES

MEETING REPORT: HAMILTON, JUNE 10-11, 2009

## INTRODUCTION

This document summarizes the outcomes of a planning meeting for the knowledgebase initiative (Appendix 1). The meeting was hosted by the United Nations University International Network for Water Environment and Health (UNU-INWEH) and sponsored by the Canadian Water Network. The objectives of the meeting were as follows:

- a. Build project consensus
- b. Operationalize the project
- c. Identify funding options
- d. Identify next steps:
  - i. Activities
  - ii. Tasks, Timelines and Responsibilities

The agenda was constructed in a manner to achieve each of the meeting objectives (see Appendix 1). After the project overview each attendee was invited to make a presentation and the organization(s) they represent (see Appendix 2). The meeting generated candid discussions prior to consensus regarding key conceptual and practical subjects. The operationalization of the project manifested itself as a series of key steps and associated timeline.

## JUSTIFICATION OF INITIATIVE

The Safe Water Provisioning Knowledgebase initiative is: *an interactive knowledgebase of sustainable safe water provisioning **solutions** for rural, remote and otherwise marginalized communities around the world that will provide simple, yet comprehensive information on solutions in addition to proven applications.*

The project is based on three foundational principles:

- Everyone should have access to safe water and sanitation
- Everyone should have access to standardized, reliable, safe water provisioning information
- Experiences from the field provide critical knowledge to enhance decision making

Given the discussion surrounding the basic need for the project, it is important to consider the project in the following two ways:

- **Solutions:**

The volume of safe water provisioning *solutions* available today must be made accessible to those in need in a trusted (validated) manner. Within this context, the knowledgebase must be developed and hosted by an independent, legitimate group.
- **Socio-cultural context:**

The social-cultural context for the application of sustainable safe water provisioning solutions is critical for sustainability. Not only will the community comprehend how a specific approach works, but also what they need to make it work in the long term, costs of system upkeep as well as examples, or lessons learned, from the implementation of this approach in other locations and similar contexts. Over time, the knowledgebase will generate integrated, appropriate and sustainable solutions from a community perspective.

## GOAL AND OBJECTIVES

## **Project Goal:**

*Improve human health by reducing water-related disease in rural, remove and otherwise marginalized communities through improve decision making for sustainable safe water that will aid in meeting the Millennium Development Goals*

The phrasing of this goal incorporates the terms:

*Sustainable:* in order to ensure that while prioritizing human health, it is not exclusively privileged. This term indicates the initiative's consideration for ecosystem health.

*Safe water:* to assert the provision of the provision of wastewater management and sanitation solutions in addition to drinking water for targeted end users

*Millennium Development Goals:* as they continue to be a relevant measure of success, especially given the knowledge of insufficient action towards the realization of these goals in the project's targeted communities

## **Project Objectives:**

1. To **engage** key stakeholders to assess the need for access to a validated knowledgebase for sustainable water and sanitation solutions.
2. To **develop** integrated tools that aid in the exchange of knowledge for sustainable safe water and sanitation solutions.
3. To **validate** the content of the knowledgebase and its delivery mechanism.
4. To **disseminate** the knowledgebase to engage the key decision-makers (stakeholders?) and the organizations that support them.

In order to establish clear and measurable objectives, our targets were distilled down to four key steps: **Engagement**, **Development**, **Validation** and **Dissemination**. Consensus on the more detailed wording was established during the discussion.

The phrasing of these objectives incorporates the terms:

*Engage:* designed as a proactive first step to help assess the main users of the database as well as the most appropriate method of disseminating information to specific communities prior to determining the tools most beneficial to them.

*Develop:* encompassing the updating of existing tools as well as the design of new tools to support the use of the knowledgebase.

*Validate:* referring to the integrity of knowledgebase content, frameworks and dissemination practices.

*Dissemination:* emphasizing triangulated interaction between stakeholders, researchers and end-users to ensure the greatest effectiveness and longevity of the knowledgebase and continued support of the toolbox.

It is important to note that community engagement is an integral element of all objectives.

## **PROJECT DETAILS**

### **END USERS**

This tool will be of use to multiple stakeholders, including community figures, public health and water professionals, engineers, NGOs etc. The challenge will be to design a knowledgebase that is flexible enough to accommodate multiple entry levels reflecting different capacities and capabilities. It may be advisable to focus on a specific stakeholder to develop the initial knowledgebase before expanding utility to a broader group.

## ACTIVITIES

### **Objective 1: Assess the need for access to knowledgebase through literature reviews and stakeholder engagement**

- What has been done?
- What is currently under development?
- What are the knowledge management tools that exist?
- What are the accepted reporting conventions?
- What information is most useful?
- What format should be used?
- How should the knowledgebase be supported?
- Where do we start?

### **Objective 2: Knowledgebase Development**

- Inclusion Criteria for technological, process, traditional and behavioural solutions as well as lessons learned
  - International expert working groups
- Common template(s) for knowledgebase variables (see Appendix 3)
  - To include typical requirements for O & M, capacity/training requirements, access to parts, costs, etc.
- Inventory/compilation of approaches
  - Literature reviews and industry contacts
- Platform and Methods for accessing information
  - Database management system, query interface, etc.
- Appropriate performance indicators and sustainability tracking
- Associated support tools
  - Reference links
  - Important organizations
  - Knowledgebase manual
  - Definition of terms
  - Discredited technologies
  - Broad Risk Framework (WSPs) (see Appendix 4)
    - Social capital
    - Institutional design
    - Demographics
    - Water quality/quantity (inter/ intra-annual variation)
    - Water-health linkages
    - Governance
    - Willingness to change; facilitators and barriers
  - Asset Management
  - Financial Management

### **Objective 3: Validation**

- Community-based
- Expert focus groups/ user groups

- Pilot studies
- Use of existing internationally recognized conformity criteria
- New lessons learned entries
- Continuous evaluation and improvement

#### **Objective 4: Dissemination**

- Capacity development
  - Methods of validation
- Community engagement (how to guide)
  - Evaluation (pilot knowledgebase)
  - Support tools
  - Demonstration sites/ facilitate linkages
  - Broaden application
  - Maintain momentum
- Awareness building/ engagement of partners
- Support; train the trainers; tools; linkages to supports network
- Synthesis and analysis
  - Policy interface

#### **POTENTIAL PILOT SITES**

The project team has expertise and current research platforms established in several areas representing different regions around the world. It is clear that we can benefit from utilizing previously established knowledge and relationships for this initiative, such as the ability to build upon established local and regional networks, and a familiarity with the physical and human environments and their interlinkages. This initiative will be rolled out incrementally with the understanding that around the world access to safe water provisioning is impeded by a lack of knowledge, capacity, willingness to change and inappropriate technologies. As such, the knowledgebase will first be developed in the following two settings:

##### **First Nations Communities in Canada**

Through Trent University, Sir Sandford Fleming College and the Assembly of First Nations the research team is able to work with Aboriginal communities in Canada to identify what information is required by different stakeholders to improve sustainable access to safe water provisioning. The research team has significant experience working with Aboriginal communities at the water-health nexus.

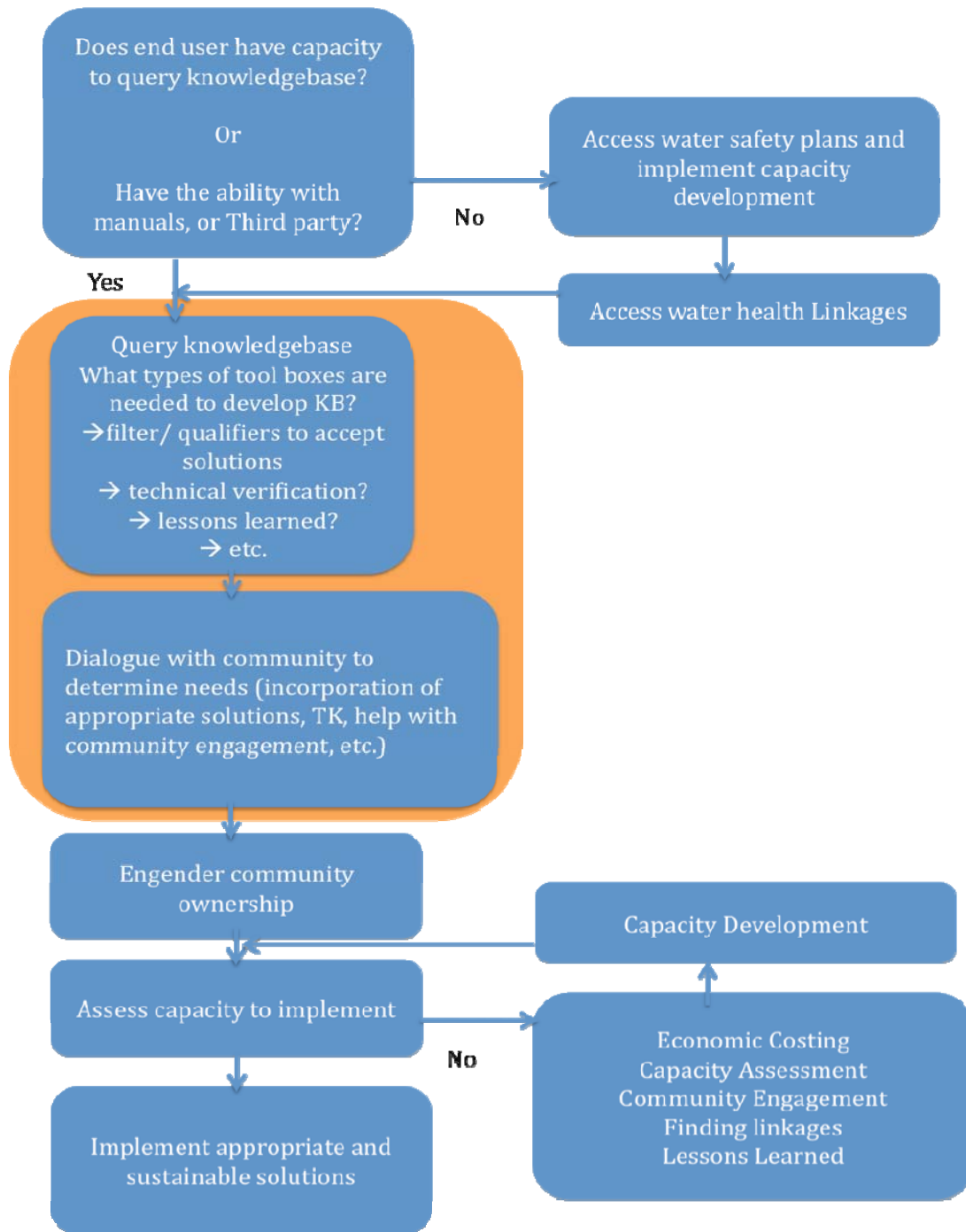
##### **Eastern Africa, Lake Victoria**

Partners in the University of Dar Es Salaam, the Kenya Medical Research Institute, Lake Victoria Basin Commission as well as local NGOs will facilitate development of the knowledgebase in this region. An ongoing study based in Kisumu, Kenya examining perceived linkages between water and health will further inform the initiative.

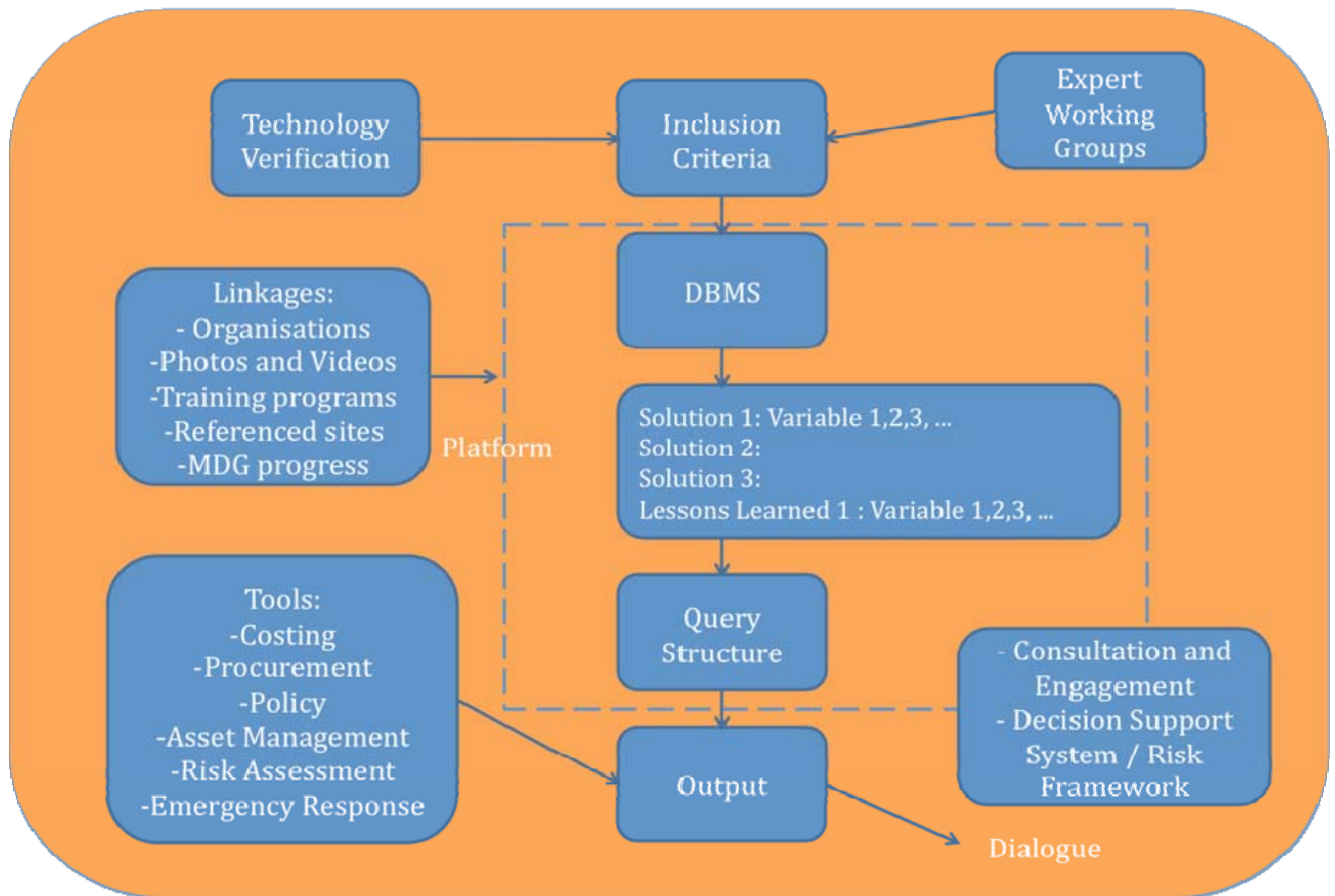
Once established, the knowledgebase platform can be expanded to other regions where partners are active, including: **Egypt, Tunisia, Bangladesh, the Mekong delta (Vietnam), and South America**. This will ensure a broad range of geographic environments from arid to tropical. As a living tool, it is anticipated that the knowledgebase will grow largely organically to cover the rest of the globe. Further, it will benefit from increased numbers of lessons learned and updates from original pilot sites, in order to enhance and sustain the content.

#### **CONCEPTUAL FRAMEWORK**

The knowledgebase will be linked to a suite of tools, which help end users to query its content and successfully implement one or more of the solutions. To this end, if the end user does not have situational information linking water and health in the community they will be able to access tools such as broad risk assessments (Water Safety Plans) and educational tools. Once a solution(s) has been identified, other tools such as capacity assessment, ability to pay, economic costing will be made available along with resources such as training, key contacts, etc (see Figure A below). The knowledgebase itself will be established according to Figure B.



**Figure A.** This structure outlines how end-users using the knowledgebase will process the information. The orange square corresponds to the knowledgebase framework (Figure B)



**Figure B.** Conceptual framework of the knowledgebase

## FUNDING AND PARTNERS

### Funding Opportunities:

- RBC Blue Water – INWEH; TRENT
- Water-health CC NCE – Susan
- CWN – workshop(s)
- WCWC - workshop
- Gordon Foundation
- Coca Cola
- CIDA community driven
- ACCC (Brent W)
- CCIP-NSERC (Brent W)
- IDRC
- World Bank
- EU
- AfDB (John W)
- Acumen Fund (John W)
- CIHR
- Acumen Fund

Others, such as Google.org, Gates and Clinton Foundations should be solicited later in the project.

It should be noted that funding proposals will need to be tailored to the specific interest of the organization, emphasizing different aspects of the initiative and identifying discrete tasks within the overall project.

### Suggested Funding Categories:

- Graduate students / PDFs
- Project Staff
- Support Staff
- Partners (in-kind)
- Field Research
- Soliciting lessons learned
- Evaluation / validation
- Platform Development
- Associated tool(s) development / modification
- Workshops
- Working Groups
- Focus Groups
- Dissemination

### Potential Partners:

- NCC Water Health
- NCC aboriginal health
- MOHLTC
- INAC
- IETC
- Acumen Fund
- Water for People
- Rotary International
- IDE Canada (Stu Taylor)
- WaterCan (George Yap)
- WaterAid
- Techneau
- International Associations
- CIDA / IDRC
- Oxfam
- Red Cross / Crescent
- TearFund
- DFID/ USAID/ AUSAID
- UN organizations
- World Water Council
- IRC
- AMCOW
- Lake Victoria Basin Commission
- Lake Victoria Environmental Management Plans
- Inter University Council for East Africa
- African Network for Water and Sanitation (Edward Kairu)

## TASKS, TIMELINES AND RESPONSIBILITIES

1. Meeting Report (INWEH)
  - End of **June**
2. Leads and membership of smaller research teams (INWEH Lead)
  - End of **June**
3. Co-ordinate with Health Canada and the World Health Organization for summer tasks (INWEH)
  - End of **June**
4. Preliminary community and stakeholder opinions (Dr. Chris Furgal, Dr. Richard Kimwaga, Mr. Irving Leblanc, Dr. Madjid Mohseni)
  - End of **August**
5. Secondary data collection and synthesis – see Objective 1 Activities, page 3 (INWEH Lead)
  - End of **October**
6. Summary of Informal Needs Assessment - document to include road map forward (INWEH Lead)
  - End of **October**
7. Discussions around concept for funding opportunities - CIDA; AfDB; IDRC (OCETA; INWEH)
  - End of **October**



CANADIAN WATER NETWORK  
RÉSEAU CANADIEN DE L'EAU



UNITED NATIONS  
UNIVERSITY

UNU-INWEH

## Safe Water Provisioning Knowledgebase For Rural, Remote and Otherwise Marginalized Communities

INTERNATIONAL PLANNING MEETING

June 10<sup>th</sup> - 11<sup>th</sup> 2009

Visitor's Inn, Hamilton, Canada

### AGENDA

WEDNESDAY June 10<sup>th</sup>

- 08:30           **Greetings** (Dr. Zafar Adeel, Director UNU-INWEH; Dr. Mark Servos, Director CWN)
- 08:45           **Table Introductions** (Facilitated by Dr. Susan Elliott)
- 09:00           **Project Background** (Attachment A) (Dr. Corinne Wallace)
- 09:20           **Participants' Background and Interest** (5 min each) (Attachments B and C) (Facilitated by Dr. Susan Elliott)
- 10:45           Break
- 11:10           **Building Project Consensus** (Facilitated by Dr. Susan Elliott)  
Goal, objectives, study design, data requirements, etc.
- 12:30           Lunch
- 13:30           **Operationalizing the Project** (Facilitated by Dr. Zafar Adeel)  
Management structure and project involvement (who else should be at the table, membership of expert working groups, project co-ordinators etc.)
- 15:15           Break
- 15:30           **Operationalizing the Project** (cont.)
- 16:30           **Summary of Day 1 and Agenda Review for Day 2** (Dr. Susan Elliott)

- 17:00 Meeting closes
- 18:00 Reception on the Balcony - McMaster Faculty Club (hors d'oeuvres served; cash bar)
- 19:00 Group Dinner (West Room, Faculty Club) (Attachments D, E and F)

THURSDAY June 11<sup>th</sup>

- 08:30 **Review of Project Consensus, Operationalization and Map of Tasks for the Day**  
(Dr. Susan Elliott)
- 09:00 **Knowledge Management Tool(s)** (Facilitated by Dr. Corinne Wallace)  
Presentation: A Knowledge Management Approach – Andrew Dansie, UNU-INWEH  
Requirements, platform, dissemination etc.
- 10:30 Break
- 10:50 **Funding the Initiative** (Facilitated by Dr. Zafar Adeel)  
Budgetary requirements, funding agencies (mandates and requirements), partner contributions (cash, in-kind)
- 11:45 Lunch
- 13:00 **Timelines, tasks and responsibilities** (Facilitated by Dr. Corinne Wallace)
- 14:30 **Closing Remarks** (Dr. Zafar Adeel, UNU-INWEH; Dr. Mark Servos, CWN)
- 14:45 Refreshments

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## APPENDIX 3: KNOWLEDGEBASE CONTENT

### SOLUTIONS

- **Application**
  - Type (technological; behaviour; traditional)
  - Water source
  - Water quality/quantity
  - Population served
  - Community type
  - Amount required/ uses
- **Requirements**
  - Materials
  - O and M
  - Capacity
  - Management
  - Financing
  - Training
  - Policy
- **Costs**
  - Equipment
  - Installation
  - O and M
  - Land
  - Training
- **Constraints**
  - Environment
  - Geography
  - Climate
  - Footprint
  - Water Quality and Quantity
- **Context**
  - Social
  - Cultural
  - Political
  - Economic
- **Other**
  - Life Expectancy
  - Burden of water-related disease
  - Considerations
  - Further Information
  - Individual Experiences

### LESSONS LEARNED

- Community Context
- Social capital context
- Vertical and Horizontal linkages
- Solution Details
- Financing
- Sources of Expertise
- Training / Education
- Facilitating policies

#### APPENDIX 4: BROAD COMMUNITY RISK FRAMEWORK

Prior to utilizing the knowledgebase a community will need to have assessed their requirements based upon key water-health linkages. This information is critical to assess the risks posed by water related diseases, the priority these hold within the community and the entry points for ensuring sustainable safe water provisioning. If a community does not have this information, a preliminary survey can be undertaken that is designed to identify specific community needs and effective safe water and sanitation approaches. This assessment will further identify how the specific user can best access information, current attitudes and practices around drinking water and sanitation, and community and cultural values and principles that will influence the type of solution implemented.

This evaluation serves to bridge social, economic, cultural and political components with the technological, behavioural and traditional approaches found within the knowledgebase. It is the intention for users to ultimately gain the capacity required to navigate the knowledgebase, engage in dialogue and articulate desired solutions to be adopted, specific to their own requirements. The needs assessment will integrate information collected in such a way that it will enable end users to better understand their specific constraints and opportunities for sustainable safe water provisioning solutions.

The following key factors should be included in a broad needs/risk assessment:

- Geography
- Socioeconomic context
- Socio-cultural context
- Demographics
- Technical aspects (ex: electricity available)
- Resources available (ex: chlorination may be against cultural norms)
- Consumables (which chemicals, electricity are actually/readily available)
- Dissemination channels & communication channels (ex: do they have internet access, what level of access, ex: paying for unit time)
- Institutional structure of the community
- Policy context (ex: is water a priority?)
- Facilitators/barriers
- Readiness for change
- How is the information gathered?
- Social capital (ex: is there a women's group located in the community?)
- Health
- Water resources
- Water uses
- Sanitation practices