

Conference Topic: Integrated Water Resources and Coastal Areas Management

Tools for the implementation of Integrated Water Resources Management (IWRM) in the Caribbean: The legacy of the Caribbean Water Initiative (CARIWIN)

Catherine Senecal and Chandra A. Madramootoo

McGill University, Brace Centre for Water Resources Management, Macdonald Campus of McGill University, 21111 Lakeshore Road, Ste-Anne-de-Bellevue, QC, Canada, H9X 3V9, catherine.senecal@mcgill.ca

While many countries and regional authorities in the Caribbean have embraced the concept of Integrated Water Resources Management (IWRM) and recognized its guiding principles as beneficial, few possessed the capacity to implement it since its enunciation in the Dublin Principles of 1992. The Caribbean Water Initiative (CARIWIN) has endeavoured over a six-year period, since 2006, to build capacity in a collaborative process with national governments, regional and international agencies. Working in conjunction with the Caribbean Institute for Meteorology and Hydrology (CIMH), CARIWIN produced three tools to support the implementation of the key components of IWRM: the National Water Information Systems, the Caribbean Drought and Precipitation Monitoring Network, and Community Water Strategies.

1. Introduction

“Scarcity and misuse of fresh water pose a serious and growing threat to sustainable development and protection of the environment. Human health and welfare, food security, industrial development and the ecosystems on which they depend, are all at risk, unless water and land resources are managed more effectively in the present decade and beyond than they have been in the past.”

The Dublin Statement on Water and Sustainable Development,
January 31, 1992, Dublin, Ireland

emanated from the United Nations Food and Agricultural Organization's prior experience in the region. One noteworthy recommendation in this context was that the types of data collected should be expanded beyond the technical, to include socio-economic, legal, environmental and

community level, and lessons learned from case studies, into a manageable process to guide the development of CWS. The framework is presented as a four-phase process involving assessment, planning, implementation and monitoring, where each phase is broken down into several sub-components and associated with specific expected outputs (McGill, 2009a). This was also expressed and refined within country-specific documents for each of the CARIWIN partner countries, i.e. Grenada, Guyana and Jamaica. The CARIWIN CWS Background Documents for Grenada, Guyana and Jamaica each examine water resources management at the national level for the country in question, establishing the context for the CWS in the pilot watershed. The information is summarized from country policy documents, strategies, and on-going programs and projects (McGill, 2009b).

These four reference documents, the framework plus the three country-specific documents, were used as the basis for discussion during the CARIWIN Regional Seminar held in Guyana, January 14-15, 2010. At this event, a capacity-building exercise conducted with national partners focussed on the prioritization of the pilot community needs; preliminary identification of key players; and the steps to implementation for each country to move forward with the CWS. Each partner country was thus trained in formulating a CWS for their pilot community and CARIWIN transferred the onus onto the individual countries to lead any further development.

4. Professional Development

Continuous updating of the knowledge base among water sector personnel is critical to maintaining a skilled work force with appropriate abilities and know-how to tackle the problems at hand. CARIWIN professional development activities have each specifically targeted a particular group of beneficiaries ranging from technical personnel, senior water managers, policy-makers, to CIMH personnel and other stakeholders such as researchers, and personnel from international or regional agencies. In all, there were 301 individual professional development opportunities offered through 23 events held in seven countries. In addition to the 301 opportunities, an additional 136 persons were present in the role of presenters or experts. Details of the professional development offered through CARIWIN are listed in Annex 1. While many of these events were of the workshop, seminar, training session, or short course type, three were official programs offered by post-secondary educational institutions.

4.1 Academic programs

With additional financing from the University of Guyana, CARIWIN assisted in the development of a new academic program in the form of a Post-Graduate Certificate in Water Resource Management offered through the University of Guyana. The program consists of three courses: Hydrology and Water Resources Management; Drainage and Irrigation; and Hydraulic Structures and Geotechnical Investigation. The Stabroek News (2012) reported the Minister of Agriculture's justification for the new program as a need for renewed efforts in equipping the ministry's human resource with the necessary skills to build capacity.

With additional financing from McGill University, CARIWIN assisted in the development of the on-line professional development program titled Integrated and Adaptive Water Resources

strategies (Richards and Madramootoo, 2010). Richards and Madramootoo (2010) also published the land use and soil parameters that were used for this model so that they may be used as a reference in the development of future hydrologic simulations in Jamaica.

Research in the area of drought monitoring is contributing to the region's effort to move from a response-driven approach towards a strategic approach focused on prevention and mitigation of drought disasters.

6.2 Household water supply and storage

Research was conducted in an aboriginal community in rural Guyana in order to suggest best practices and provide information based on IWRM principles which may serve to inform decision-making for water supply and water safety investments. A study to compare the rates of adoption at the household level between three drinking water treatment options was conducted using the Biosand slow-sand-filter, the ceramic candle filter, and the application of a chlorine product marketed as Chlorosol. Of the three treatments tested, it was found that ceramic candle filters performed best in terms of the rate of adoption (Young-Rojanschi *et al.*, 2009).

An investigation was also conducted in the same community on the feasibility of scaling-up Domestic Rain Water Harvesting (DRWH) to improve water security. Intven argued that DRWH systems were shown to be a relatively low cost option for universally improving a households' geographical and temporal access to a water source. As domestic rainwater harvesting (DRWH)

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