

## Chapter 92

# Promoting Rainwater Harvesting (RWH) in Small Island Developing States (SIDS): A Case in the Grenadines

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### ABSTRACT

*A sustainable development path is critical to most small island developing states, which are often environmentally fragile and have little natural resources. For decades, the small Grenadine islands in the Eastern Caribbean have depended on rainwater harvesting (RWH) for water supply. The RWH systems have improved from the use of household drums and communal cisterns to individual cisterns such that water per capita use at some households is at a similar level to that of developed countries. This improvement was brought about through self-financed projects and the use of local construction know-how. A small project to promote RWH in Green St. Vincent was reviewed to procure an appreciation of the diffusion process. The RWH experiences in these islands as they relate to quality, design, and cost can be relevant to the regional efforts of promoting RWH. The chapter proposes a framework for enhancing the promotion of RWH. The chapter recognizes the importance of RWH in disaster management in the islands.*

### ORGANIZATIONAL BACKGROUND

Freshwater, which is fundamental to life and health, is a diminishing natural resource. Currently, access to freshwater in many parts of the world is limited. The Dublin Statement on Water

and Sustainable Development recognized that the scarcity and misuse of fresh water pose a serious and growing threat to sustainable development and to the protection of the environment. Sustainable development, which was first conceptualized as a solution to environmental problems, has been defined in many ways. The most notable defini-

DOI: 10.4018/978-1-4666-4852-4.ch092

tion is from *Our Common Future*, also known as the Brundtland Report (WECD, 1987). Here it is defined as *development that meets the needs of the present without compromising the ability of future generations to meet their own need*. This requires that the world be seen as a system—a system that connects space and time.

Given that most societies desire to achieve economic development to secure higher standards of living, as well as seek protection and enhancement of their environment, now and for their children. Sustainable development tries to reconcile these two objectives (HMSO, 1994). To ensure that development is sustainable, its costs should not be transferred to future generations or, at least, an attempt should be made to compensate for such costs (Pearce, 1993). Since the Brundtland report and the Rio Summit, sustainable development has transitioned from being an interesting yet at times contested idea to a widely endorsed concept and an almost universally adopted guiding principle (Drexhage and Murphy, 2010).

For many years the World Health Organization (WHO) has been monitoring water supply and sanitation worldwide. At the 1992 UN Conference on Environment and Development, 178 nations agreed to Agenda 21, a set of social and economic development goals resulting from the Rio Declaration on the Environment and Development (UNCED, 1992). In 2000, the world community adopted the Millennium Development Goals (MDGs), which provided a framework and an impetus for the world to accelerate the pace of development and improve human welfare. As water and sanitation are important issues to human welfare, the MDGs gave special consideration to these issues in Goal 7 and set targets aimed at halving the proportion of people who are unable to reach or to afford safe drinking water by 2015. Improving the development and management of freshwater resources is critical to meeting the MDGs. Since Agenda 21, there have been a number of international and regional conferences and seminars aimed at making deci-

sions and seeking financial support for meeting the MDGs. Nonetheless, achieving the MDGs remains a challenge for many countries in the face of small state budgets and limited donor support. The Caribbean and Latin America, however, are on track to meeting the MDGs (WHO and UNICEF, 2004). In preparation for the 20<sup>th</sup> anniversary of the formulation of Agenda 21 or the Rio+20 UN Conference on Sustainable Development (20-22 June 2012), world leaders intend to secure renewed political commitment for sustainable development, assess current progress and the remaining gaps in the implementation of the outcomes of the major summits on sustainable development, and address new and emerging challenges.

In Latin America and the Caribbean (LAC), over 75 million people have no access to safe drinking water (IADB, 2005). In the Caribbean Community (CARICOM), access to freshwater is better than that for the rest of the LAC. However, population growth, rural to urban migration and environmental issues such as climate change and sea level rise are expected to negatively impact water quality in the future. Therefore, the overall sustainability of access to safe freshwater will be a future challenge for planners and policy makers in their quest to promote sustainable development. In small island developing states (SIDS), policy makers and managers in the water sector are being challenged to meet the MDGs given the increasing trends of extreme events, limited freshwater availability and demands for competitive water uses. This challenge is most evident in the very small Grenadine islands of the Eastern Caribbean where surface water is non-existent and poor quality groundwater is limited. In these islands, rainwater harvesting (RWH) is the main source of potable and non-potable water supply.

In many small islands, a total annual rainfall of 1000 mm (40 inches) is generally sufficient for RWH. However, the seasonality of the rain can raise concerns about the reliability of RWH, particularly during the dry season. In some islands, RWH has not generally been given the attention

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