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**OVERVIEW OF THE WATER PROFILE AND THE CAPACITY OF
NATIONAL INSTITUTIONS TO IMPLEMENT INTEGRATED
WATER RESOURCES MANAGEMENT
*(Antigua and Barbuda, Dominica, Grenada)***

This document has been reproduced without formal editing.

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Executive Summary

The Caribbean islands Antigua and Barbuda, Dominica and Grenada are Small Island Developing States (SIDS) each with populations less than 100,000 persons. The most important factor in the development of the economies of Antigua and Barbuda, and Grenada is tourism, whereas for Dominica it is agriculture.

Each of these islands enjoys a tropical marine climate with little seasonal variation. Annual rainfall for Antigua and Barbuda varies from 750 to 1,400 mm and for Grenada from 1,500 to 5,000 mm whereas average annual rainfall for Dominica ranges from 1270 mm to 7620 mm. Annual temperatures for these islands vary between 20° C and 34° C. Unlike Dominica and Grenada, the annual average evapotranspiration rate in Antigua and Barbuda is higher than the annual average rainfall.

In the three islands, the organizations responsible for the provision of a potable water supply, namely the Water Division of the Antigua Public Utilities Authority, the Dominican Water and Sewerage Company and the National Water and Sewerage Authority of Grenada, are also responsible for water resources management. However, the focus on water resources is minimal. Water resources/hydrological monitoring is inadequate and the data collected do not allow water availability to be assessed. Water sources in Antigua and Barbuda and Grenada are surface water, groundwater, rainwater harvesting and desalinated water, whereas in Dominica the water source is from surface water.

The water allocation mechanism for each of the islands is based on meeting water requirements of the various users and availability, otherwise known as a supply management approach. Domestic supply is a priority for each of the islands but tourism is also a priority for Antigua and Barbuda, and Grenada. In each of the islands, the World Health Organization (WHO) guidelines are used as the standards for water quality and the Ministry of Health monitors the potable water quality which generally meets the required standards. In each of the three islands, a department/division of the Ministry of Agriculture is responsible for watershed management which, in general, is not undertaken effectively and appears to be almost non-existent in Antigua and Barbuda. There is water abstraction licensing in Antigua and Barbuda, and Dominica. With respect to Grenada, legislation supports water licensing but there are no regulations and licensing of water abstraction has not been established.

Environmental impact assessments are requirements of the planning process in Dominica and Grenada but they are not mandatory in Antigua and Barbuda. The latter is certainly a deficiency to supporting sustainable management. However, recently in Antigua, an Environmental Management Protection Bill and an Environmental Health Bill were drafted.

Wastewater disposal in the islands of Antigua and Barbuda, Dominica and Grenada is mainly by septic systems and soak ways. However, in Dominica, there are three centralized sewerage systems – one serving 2,700 households in Roseau and two smaller sewerage systems in Canefield and Jimmit. Only at the Roseau system is basic material and sludge removed. In Grenada, there is one centralized sewerage system in the south of the island which has no treatment before disposal at sea. However, in Antigua and Barbuda, there is no centralized

sewerage system, although the Public Utilities Authority has powers to establish, operate and maintain a sewerage system.

Water is a social good, it has an economic value and it must be managed for sustainability. In Antigua and Barbuda, the cost of potable water to consumers indicates that the water supply is highly subsidized and poor areas in Antigua and Barbuda have access to free supplies of potable water through public standpipes. In Dominica, the latter is similar for the poor sector. The cost of water supply and sewerage services is a function of affordability to pay and not of economic value. A metering system for all consumers in Dominica was introduced as a deliberate conservation policy and a means of reducing wastage. Similarly, in Grenada metering has resulted in improved efficiency of domestic water use, and acceptance to pay for water used. In Grenada, standpipes were removed to ensure each household is connected to the potable water supply system in areas where metering was introduced. An easy payment plan was also introduced to facilitate household connections.

In Antigua and Barbuda because there is no centralized sewerage system, the tariff structure is only for water. For domestic purposes, the rates rise with an increase in consumption and therefore support efficiency of use and conservation. In Dominica and Grenada, the tariff structure is a system to recover costs for both potable water supply and sewerage services. In Dominica, the structure is not designed to reflect the economic value of water nor the need to encourage conservation. In Grenada, the tariff structure should be designed for full cost recovery according to the National Water and Sewerage Authority (NAWASA) Act 1990, but this is not the case.

Water resources data and information are neither comprehensive nor sufficient to support effective decision-making for sustainable water resources management in any of the three islands. There is also no mechanism for the dissemination of water resources data and information which are only disseminated on request.

An effective institutional framework is fundamental to implement policies and plans for successful integrated water resources management. Therefore, the structure, roles and responsibilities at the national, sectoral and community watershed levels must be clearly defined and coordinated to effectively undertake the scope of actions in the water sector. The responsibility of the water sector must be shared with key stakeholder departments. Hence, a number of sectoral policies and plans must be consistent with the National Water Resources Management Policy. This water resources management policy must also be in keeping with National Development Plans. Within the context of the specific functions and tasks inherent in Integrated Water Resources Management (IWRM), the present institutional framework of the water sector is inadequate with respect to planning, management and regulatory functions of water resources.

There is no specific IWRM policy, strategy and plan for the three islands. The water resources management activities being undertaken are based on a sectoral approach. Coordination is absent and collaboration on water resources issues is minimal. At present in Grenada, a National Water Policy in which IWRM is an integral part is being drafted. Dominica also expects to start work on development of an IWRM policy before the end of 2007. There is

also no legislation on IWRM in the three islands and insufficient enforcement of legislation which relates to water resources management.

In the three countries, neither a water resources master plan nor a water allocation mechanism has been developed. Water requirements of the various sectors have also not been determined and in the absence of an analysis of water demand, demand management is not directly applied

Conservation measures are minimal. In Antigua and Barbuda, and Grenada, the tariff structure and the limited public education support conservation. In addition, the metering programme in Grenada also supports conservation but the 40 per cent water loss in the distribution system is a major contributor to wastage. In Dominica, conservation measures seem almost non-existent.

Inherent in the core IWRM functions are actions linked to other sectors that are necessary for sustainability of use and development of this water resource and to support social and economic development. Effective IWRM must be undertaken in conjunction with effective land and landuse management, integrated watershed management, drainage and coastal zone management. These necessary complementary functions should be undertaken in a formalized coordinated approach with stakeholder partnerships and collaboration from planning to implementation and supported by proper public education and awareness.

In the three islands, water resources management is the responsibility of the potable water supply organizations but the core activities of IWRM are not being undertaken because of insufficient and competent human resources. In addition, the key stakeholder organizations generally lack the capacity or skills and experience needed, hence the establishment of IWRM would require additional capacity-building, training and recruitment of appropriate staff.

The core functions of IWRM should not be placed in the organization responsible for potable water supply and sewerage services or any organization that is a user of the resource, as this is conflicting and tantamount to the manager of the resource being managed by a user of the resource. Furthermore, in addition to the deficiencies in human resources capacity and capabilities and the lack of financial resources, challenges which have led to IWRM not being implemented or advanced include:

- Lack of understanding of IWRM;
- The location of IWRM;
- Lack of vision for IWRM;
- Development of an IWRM organizational structure;
- Implementation of an effective governance structure;
- Lack of skills and knowledge base required;
- Financing of an IWRM organization.

The way forward must, therefore, focus on how IWRM could be implemented in the islands.

Introduction

This report presents an overview of the water profile and the capacity of national institutions to implement Integrated Water Resources Management (IWRM) in three islands; Antigua and Barbuda, Dominica and Grenada. The methodology included the development of a questionnaire that was forwarded to the water organizations in the three islands and in the case of Grenada, to the Landuse Division of the Ministry of Agriculture as well. The questionnaire addressed the following:

- Water resources assessment;
- Enabling environment;
- Baseline on demand and supply;
- Institution;
- Social change instruments;
- Economic instruments;
- Regulatory instruments;
- Information management and exchange.

Additional information was obtained through face-to-face interviews and meetings with representatives of key IWRM government stakeholders in Dominica and Grenada as well as the telephone interviews with major stakeholder representatives in each of the islands. Further information was obtained through a review of the relevant literature.

A. IWRM

The Global Water Partnership (GWP) defines IWRM as “a process which promotes the coordinated development and management of water, land and related resources in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystem.” (GWP, 2006).

B. Water management principles

Four water management principles developed in Dublin, Ireland,(UNCED - Rio de Janeiro, 1992) play a major part in water sector reform:

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