



Integrated Water Resources Management Planning Approach for Small Island Developing States

GUIDELINES, METHODS AND TOOLS

Integrated Water Resources Management Planning Approach for Small Island Developing States

Integrated Water Resources Management Planning Approach for Small Island Developing States

Published by the United Nations Environment Programme in February 2012

Copyright © 2012, United Nations Environment Programme

ISBN: 978-92-807-3254-2

Job Number: DEP/1506/N

UNEP would appreciate receiving a copy of any publication that uses this publication as a source.

Disclaimers

This publication may be reproduced in whole or in part and in any form for educational or non-profit purposes without special permission from the copyright holder provided acknowledgement of the source is made. UNEP would appreciate receiving a copy of any publication that uses this publication as a source. No use of this publication may be made for resale or for any other commercial purpose whatsoever without prior permission in writing from UNEP. The designation of geographical entities in this report, and the presentation of the material herein, do not imply the expression of any opinion whatsoever on the part of the publisher or the participating organizations concerning the legal status of any country, territory or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

©Photos and illustrations as specified.

Citation

For bibliographic purposes, this document may be cited as:

UNEP, 2012. Integrated Water Resources Management Planning Approach for Small Island Developing States. UNEP, 130 + xii pp.

Lead Author: Vasantha Chase

Contributors: Deborah Bushell and Luvette Louisy

Technical Editors: Thomas Chiramba (Freshwater Ecosystems Unit, UNEP), Doris Mutta (Nairobi Convention, UNEP) and Elizabeth Khaka (Freshwater Ecosystems Unit, UNEP)

Manuscript and Production Editor: Daisy Ouya

Design and Layout: Conrad Mudibo, Ecomedia Ltd, Kenya

UNEP promotes
environmentally sound practices
globally and in its own activities.

This publication is printed on paper from
sustainable forests including recycled fibre. The
paper is chlorine free and the inks vegetable-
based. Our distribution policy aims to reduce
UNEP's carbon footprint.

Foreword

The world's Small Island Developing States (SIDS) - located in the Caribbean Sea and the Pacific, Indian and Atlantic Oceans - have unique ecological, geographical, hydrological, economic and cultural characteristics. SIDS are renowned for their natural tropical beauty, and a good number of SIDS' economies are built around tourism, a major consumer of freshwater. Typically with small land masses, small populations and a narrow base of livelihood options, most SIDS lack the economic, institutional and human-resource capacity of larger countries with broad-based economies. SIDS are also particularly vulnerable to the impacts of climate change, which include extreme weather and sea-level rise.

Integrated Water Resources Management (IWRM)—the systematic process of sustainably developing, allocating and monitoring the use of water resources in the context of social, economic and environmental objectives is key to development in SIDS. Successful IWRM approaches for SIDS must take into account these special characteristics, as well as local cultural and social contexts.

To this end, an extensive suite of resources for IWRM is available. Among these tools are the Global Water Partnership Toolbox for IWRM and the UNEP Handbook on the Development and Implementation of National Programmes of Action for the Protection of the Marine Environment from Land-based Activities.

This Resource Book makes the case for IWRM Guidelines specific to SIDS, and argues that unlike traditional models, SIDS desiring to implement IWRM need not start with expensive and time-consuming institutional reforms. They can start small, using pressing water-related issues as “entry points”, and fine-tuning their IWRM strategies from experience. This pragmatic approach towards sustainable water management promotes co-ordinated development and management of water, land and related resources without compromising the sustainability of vital ecosystems.

The publication contains numerous case studies of best practices of IWRM in SIDS, and a practical and logical framework of activities at various levels—national, watershed, and community. It puts forward a SIDS IWRM Planning Cycle and Methodology, a framework with three important pillars: stakeholder participation; continuous sensitisation and public awareness; and the creation of scenarios.

This publication will complement existing IWRM initiatives in SIDS. It will serve as an inspiration and practical guidance tool for those concerned with water planning and management, including coastal zone management practitioners; representatives of public-sector agencies in the water sector; organizations dealing with watersheds and catchments; and community groups interested in improving the quality and quantity of water in their locality.

Water is life. In the face of a burgeoning global population and climate-change-related weather variability, the urgency of rational and sustainable management of the planet's water resources, including on the SIDS, is today as keen as it ever was.

Ibrahim Thiaw
Director, Division of Environmental Policy Implementation
United Nations Environment Programme (UNEP)

Executive Summary

Integrated Water Resources Management (IWRM), which draws its inspiration from the Dublin Principles¹, is a systematic process for the sustainable development, allocation and monitoring of water-resource use in the context of social, economic and environmental objectives. The three pillars of IWRM as described in the Global Water Project's GWP-TAC (2004)² are:

- Moving toward an *enabling environment* of appropriate policies, strategies and legislation for sustainable water resources development and management;
- Putting in place the *institutional framework* through which the policies, strategies and legislation can be implemented; and
- *Setting up the management instruments* required by these institutions to do their job.

An extensive suite of tools for IWRM is already available. These include the *Global Water Partnership Toolbox for IWRM* and the *UNEP Handbook on the Development and Implementation of National Programmes of Action for the Protection of the Marine Environment from Land-based Activities*. There is also a body of knowledge that has been generated through the EU Directives emanating from the 6th EU Framework Programme. The “*New Approaches to Adaptive Water Management Under Uncertainty*” (NeWater) project, conducted between 2005 and 2008, was an integrated project co-funded by the “Global Change and Ecosystem” sub-priority of the 6th EU Framework Programme. The major goal of the project was to develop a theoretical and practical framework to support the transition of existing water management regimes towards greater adaptivity. Based on this framework, specific approaches and tools have been tested and further developed for practical applications in various river basins. Another suite of tools and methods has been developed through the *EMPOWERS Approach to Water Governance*³.

However, despite the vast array of tools and guidelines, no comprehensive IWRM guidelines/methodologies currently address the special characteristics of Small Island Developing States (SIDS). For instance, existing guidelines do not take into account the particular geographical and hydrological characteristics and vulnerabilities of SIDS. On small islands, the whole landmass is a wraparound coast, and the frame of reference for IWRM in SIDS must encompass the entire watershed and its receiving waters. In addition, the whole island is a system of highly integrated ecosystems and sub-ecosystems such that any intervention within a hydrological system must consider the impact of the intervention on the whole hydrological system.

In addition, there is the question of whether the governance systems, the management capacities, and the types of financing required for traditional IWRM are actually culturally and politically sensitive to the needs of developing countries, particularly SIDS. The successful implementation of classic IWRM plans requires SIDS to perform significant institutional and legislative reforms. This process calls for the establishment of a reformed institutional structure that involves decision-makers at the highest political level, from ministries, agencies, local administrations, the civil society, NGOs, private sector, and other actors concerned with the management of water resources.

SIDS require a critical mass of institutions, (including foreign missions, education and health services and police) to exist as a “State”. Consequently, a SID’s public-service human resources are often spread very thinly across government institutions. Putting in place a strategy development

1 Solanes, Miguel and Fernando Gonzalez-Villarreal, n.d. The Dublin Principles for Water as Reflected in a Comparative Assessment of Institutional and Legal Arrangements for Integrated Water Resources Management. GWP, TAC.TAC Background Paper No. 3

2 GWP Technical Committee: Tools for keeping IWRM strategic planning on Track.

3 The EMPOWERS partnership is a group of organisations and individuals committed to improving water governance and, more particularly, the rights and long-term access of disadvantaged social groups to reliable water supplies. The EMPOWERS partnership is developing a process methodology, practical tools and knowledge for improved participatory water resource management and water service provision at the local level; that is, at and between governorate/district and end-user levels.

process involves additional costs, including those associated with reform of laws and institutions, engaging civil society and the private sector in the strategy process, and developing new skill sets. The vast majority of SIDS simply do not have the necessary resources to reform their water sector while maintaining all the other functions that they have to in order to function as States. Unless funding is available from external sources to undertake the reform of the water sector, limited national budgetary resources will not be allocated for a major undertaking such as the reform of the water sector. In many instances such a reform may also not be politically expedient.

UNEP, in partnership with the Global Environment Facility, is therefore keen to develop an IWRM methodology which will reflect the unique geological, bio-geographical, socio-economic and cultural attributes of SIDS and take into consideration the need to conceptualise IWRM within the framework of an entire watershed stretching from the ridge to the reef. The objective of the intervention is to develop a globally applicable resource book for developing and implementing IWRM for SIDS.

It should, however, be noted that each of the SIDS regions, particularly the Pacific and Caribbean regions, has also adapted its own toolkit for developing IWRM. The Pacific Islands Applied Geo-science Commission, for instance, has developed a wide range of IWRM toolboxes. These toolboxes have been designed to provide important material on the different aspects of IWRM planning and implementation. The *Integrating Watershed and Coastal Area Management* (GEF-IWCAM) project in the Caribbean has developed a checklist of the steps required in the development of a national integrated water resources management plan, and the actions/requirements to develop the IWRM plan. All of these, however, are based on the GWP Tool Box and Guidelines, the core of which is reform of governance of the water sector.

The GWP's premise⁴ is that problems are aggravated by shortcomings in the management of water. Sectoral approaches to water resources management have led to the fragmented and uncoordinated development and management of the resource. Moreover, water management is usually left to top-down institutions, the legitimacy and effectiveness of which have increasingly been questioned. Thus, the overall problem is caused both by inefficient governance and increased competition for finite resource. Consequently the important elements of the GWP IWRM framework are the enabling environment, the institutional roles, and the management instruments. These three elements speak to improving governance of the entire water sector.

Unfortunately, by making institutional reform a prerequisite, IWRM proponents put the initiation of IWRM principles beyond the reach of SIDS. Experience shows that the paradigm for SIDS has to acknowledge that initial major reforms in water governance are not a prerequisite for IWRM or for catalyzing change in the water sector. First steps that can easily be implemented are often enough to begin the process of moving towards more sustainable water development and management.

There has also, until recently, been a pre-occupation with the river basin or large catchment being the most sensible unit for IWRM. While certainly some functions are best handled at this scale, the second Dublin principle speaks of acting at the lowest appropriate level; much water management has to happen at far more local levels⁵. Additionally, while basin-level IWRM by representative bodies in which all stakeholders are fully and fairly represented is a good target, or endpoint, a strength of the IWRM paradigm is that real and significant improvements in water management can be made at all levels—from the household to the international basin—by individuals and institutions applying the Dublin principles in the context of their own abilities and opportunities⁶.

4 GWP Technical Advisory Committee, 2000. TAC Background Paper Number 4. Integrated Water Resources Management

5 Blomquist, W., Dinar, A., Kemper, K. 2005. Comparison of institutional arrangements for river basin management in eight basins. Policy, Research working paper 3636. <http://econ.worldbank.org>

6 Moriarty, P.B., Visscher, J.T., Bury, P. and Postma, L.. 2000. The Dublin principles revisited for WSS. 26th WEDC Conference Water, Sanitation and Hygiene: Challenges of the Millennium, Dhaka, Bangladesh. www.lboro.ac.uk/departments/cv/wedc/conferences/26contents.htm

The experiences gained from the implementation of SIDS indicate that IWRM for SIDS is a pragmatic approach towards better and more sustainable water management: it is a **process** which promotes the co-ordinated development and management of water, land and related resources, without compromising the sustainability of vital eco-systems; it is *not* a time-bound plan to guide a country in using and managing its water resources with clearly identified goalposts and milestones. Furthermore, IWRM for SIDS does not mean that all actions have to be fully integrated and handled by a super-agency that replaces the many actors in water; rather, it is about stakeholders finding ways to coordinate and address coordination problems in the management of water resources.

This Resource Book provides a series of case studies from each of the three SIDS regions (Caribbean, Pacific, and Atlantic & Indian Oceans), and a conceptual framework for the SIDS IWRM methodology. In doing so, the book makes a case for IWRM Guidelines specific to SIDS and uses examples and case studies from SIDS to explain the SIDS IWRM Planning Cycle and Methodology. It also provides guidelines for incorporating the gender, and the ecosystems approaches into the SIDS IWRM Planning Cycle. There is also a section on climate change and vulnerability, and a framework for incorporating monitoring and evaluation indicators into the Planning Approach. The Resource Book also contains a tool kit of the different methodologies that are incorporated into the SIDS Approach; and examples of templates and methods that have been determined to be best practices arising from IWRM experiences in other SIDS. A comprehensive bibliography of relevant books, reports and documents on IWRM, on the methodology and tools for the SIDS IWRM Approach is provided.

The Resource Book was discussed and finalised at a review meeting held in Saint Lucia from 24–26 August 2010. Participants at the meeting were from the three main SIDS regions. The comments and recommendations from this workshop have been incorporated, as appropriate, into the Resource Book.

About this Resource Book

What this Resource Book sets out to do

This Resource Book provides a suite of case studies of Integrated Water Resources Management (IWRM) approaches in small island developing states (SIDS) around the world, and based on those experiences, describes a practical and logical framework of activities for the planning, development and implementation of integrated water resources management/integrated water development plans at the national level, at the level of watersheds and at the level of villages and communities. It advocates collaboration and dialogue between all stakeholders involved in solving a problem whose solution will contribute to improving the management of the water sector at the macro, meso, or micro level. The stakeholder dialogue and consultation requires creating time, space, and institutional platforms for interaction within a specific geographical area, between those who have a stake in the water resources and those who provide the services.

There are three issues that are core to these Guidelines: **Stakeholder Participation; Continuous Sensitisation and Public Awareness; and the Creation of Scenarios** for looking at different pathways to solving problems. The process of participatory analysing, visioning and strategic planning is at the heart of this Resource Book, as is also observed in the numerous IWRM interventions in SIDS.

Who should use this Resource Book?

The Resource Book is relevant to all those concerned with tackling integrated water resources management, including coastal resources and coastal zone management (especially as they relate to pollution and waste water management). It is also relevant for those who would like to be familiar with what is going on with IWRM in SIDS in various regions of the world, and those wishing to initiate and facilitate a change process in water resources planning and management in SIDS. The guidelines, methods and tools described are based on experiences and best practices from SIDS. Their application will help to achieve necessary changes in water resources management, particularly if those leading the process have a high level of technical and facilitation capacity. Of course, the Resource Book will be most effective in the hands of people with skills and commitment.

The Resource Book can be used by representatives of public sector agencies who are involved in the water sector; by groups in a watershed or catchment; and by community groups at the village level who are interested in improving the quality and/or quantity of water they receive. What is important is that the process has to be consultative, it has to include all the stakeholders and it must lead to attaining a developmental goal, be it at the national, watershed or community level.

预览已结束，完整报告链接和二

<https://www.yunbaogao.cn/report/index/report?rep>