



**Status of Implementation of
CSD-13 Policy Actions on
Water and Sanitation**

Department of Economic and Social Affairs

Division for Sustainable Development
Water, Natural Resources and Small Island Developing States Branch



United Nations

Status of Implementation of CSD-13 Policy Actions on Water and Sanitation

A Country Level Survey

United Nations Department
of Economic and Social Affairs (UN DESA)

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Acknowledgements

Project Management UN DESA

Muhammad Aslam Chaudhry; Frederik Pischke; Friedda Radovic

Project Team SIWI:

Manfred Matz; Jacques Rey; Britta Gustafsson; Anders Berntell, Jakob Granit, Britt-Louise Andersson]

Project Reference Group:

Yvan Kedaj (AfDB/AWF); Ronit Golovaty (Israel Export & International Cooperation Institute); NN (Israel); Anders Berntell (SIWI); Felix Dodds (Stakeholder Forum); Joakim Harlin (UNDP); Manuel Dengo (UN DESA); Gabriele Borla (UN DESA); Aaron Salzberg (US Department of State); Johan Kuylensstierna (UN-Water); Henk van Norden (UNICEF, JMP); Olcay Ünver (WWAP)

International independent experts for country-level surveys

Agim Shimaj (ALBANIA); Q. K. Ahmad (BANGLADESH); Monica Ayala Soliz (BOLIVIA); Bernard Khupe (BOTSWANA); Galia Bardarska (BULGARIA); Jerome Thiombiano (BURKINA FASO); Margarida Santos (CAPE VERDE); Mouhyddine Saleh (CHAD); Monica Dunoyer Mejía (COLOMBIA); Job Munduku Kaseya (CONGO); Ahmed Gaber (EGYPT); Gulilat Birhane (ETHIOPIA); Sedigheh Torabi (IRAN, ISLAMIC REPUBLIC OF); Ali Subah (JORDAN); Vadim Sokolov (KYRGYZSTAN and TAJIKISTAN); Bouttavong Somvann (LAO PEOPLES'S DEMOCRATIC REPUBLIC); Simon Rafanomezantsoa (MADAGASCAR); Bassirou Diagana (MAURITANIA); José Luis Pablos Hatch (MEXICO); Mokhtar Bzioui (MOROCCO); Dinis Juizo (MOZAMBIQUE); Javier Lopez Medina (NICARAGUA); Akhtar Bhatti (PAKISTAN); Cesar Yñiguez (PHILIPPINES); Dancilla Mukakamari (RWANDA); Steve Rogers (SAMOA); Mame Dagou Diop (SENEGAL); M Wickramage (SRI LANKA); James Ngana (TANZANIA, UNITED REPUBLIC OF); Paul Hinds (TRINIDAD AND TOBAGO); Gustavo Nagy (URUGUAY); Phan Do Hong (VIET NAM); Abdul Mukred (YEMEN); Imasiku A. Nyambe (ZAMBIA)

Preface

Implementation is one of the key challenges of sustainable development. The World Summit on Sustainable Development (WSSD) in 2002 focused on this challenge and concluded with the Johannesburg Plan of Implementation (JPOI).

This report is an attempt to further the implementation agenda in the domain of water and sanitation. It is based on a survey carried out in 35 countries under the project “Global Initiative for Rationalizing Water-Related Information (GIRWI)”, on the state of implementation of policy actions and measures relating to integrated water resources management, water supply and sanitation.

The survey collects information on three questions: what works (and what doesn't), what areas need urgent attention, and how to scale up successful practices. It builds upon the decisions reached during the 13th Session of the Commission on Sustainable Development (CSD) in 2005, under which integrated resource management was accepted as a common framework for the sustainable development of water and sanitation sectors. The countries selected for the survey represent a wide spectrum of human, natural, and economic resources.

The survey results reveal several gaps. In many cases, appropriate policies on sanitation and wastewater are not in place. Similarly, necessary institutional and administrative structures have not been established not only in the domain of sanitation and wastewater but for the entire water sector; and this impedes the effective application of sound policies. Finally, inadequate financing limits the favourable impact of the many good examples. The survey also points to the need for additional research on adapting existing technologies to emerging challenges.

The results of the survey would be useful for all stakeholders in assessing how an enabling environment could be created at national as well as international levels to help in the achievement of the internationally agreed goals on water and sanitation.

A follow up report will present results from the second component of the GIRWI project, whose goal is to develop a common methodological framework for water sector monitoring. The second phase relies on practical experience in two pilot developing countries (Ethiopia and Albania). In this work, the purpose is to focus on the practical issue of whether the current system of water sector information suitable for informed policy decisions. If it is not so, what are its weaknesses and gaps, and how these weaknesses could be overcome and the existing information system upgraded to meet with emerging policy challenges.

I am grateful to the Government of Italy for providing financial support to the GIRWI project, and to the Stockholm International Water Institute (SIWI) for carrying out this study on behalf of UN DESA. I would also like to acknowledge the valuable inputs received from water and sanitation experts during the course of the study.

Overall supervision of this study was provided by the Water, Natural Resources and Small Islands Branch of DESA.



Tariq Banuri
Director

Division for Sustainable Development
United Nations Department of Economic and Social Affairs

Executive Summary

In April 2005, during the 13th session of the Commission for Sustainable Development (CSD) held in New York, 72 policy actions¹ designed to encourage governments to improve the policy framework, and thus management, of the water (water supply services and Integrated Water Resources Management, IWRM) and sanitation sectors were formulated and agreed upon. Commissioned by the United Nations Department of Economic and Social Affairs (UN DESA) and funded by the Government of Italy, this report assesses the extent to which these policy actions have been implemented in 35 selected countries. Data for this project was gathered from official documents and interviews with government officials.

Generating this report presented many challenges as it differs from other monitoring exercises in several important respects. Firstly, qualitative policy actions had to be “translated” into measurable and comparable data. Five criteria were developed to accomplish this. In order to guarantee impartiality, 34 international independent experts were engaged in this project. Ensuring a common understanding and interpretation of the qualitative criteria between these experts posed an additional challenge. To overcome this difficulty, and ensure each individual report was as complete and consistent as possible, the Stockholm International Water Institute (SIWI) team maintained regular contact with the consultants for several months. These survey results have been brought together in a 500 page compendium on water policy status. The data, in Excel and ACCESS formats, can be found in a CD in the inside cover of this report.

To correlate the policy actions with the performance in the water sector and development conditions in a given national context, data from external sources, such as the Joint Monitoring Programme (JMP), the UN Human Development Report and FAO-Aquastat was used. The methodology used allowed for the identification of different groups of countries for example, those with similar policy implementation contexts, and others where the link between policy and performance needs further improvement.

Key survey findings at the global/macro level:

- The implementation of sanitation policies lags behind that of water supply services and IWRM policies.
- Planning and capacity building have received much attention. In contrast, research and adapting technologies to national scale and context have been neglected.
- The implementation of water and sanitation policy actions is not sustainable in many cases due to deficient institutional and administrative structures and financing.
- The Human Development Index (HDI) does not appear to be a significant determinant for the level of success of policy implementation.
- Performance in water supply and sanitation is dependent on sound policies, although correlation is not very strong.

Key conclusions on moving forward include:

- The lack of progress in the sanitation sector highlights the need for renewed efforts in order to achieve the MDGs.
- The level of success in implementing policy action cannot be explained only by context indicators, such as the HDI. The analysis points out that other factors such as political will are important as well.
- The lack of institutional and financial provisions for implementing agreed policies poses a serious threat to achieving sustainability in the water sector in most countries. Hence, efforts to strengthen institutions and ensure financing of the water and sanitation sectors continue to be vital.

The findings of the survey provide concrete data on water management by national governments. These findings demonstrate that sound government policies and their implementation are necessary to achieve globally agreed goals in the water and sanitation sectors. However, in order to reach the intended beneficiaries, these policy actions must be accompanied by adequate structures and financing.

The report is useful for both the surveyed countries and those not included in the study. Countries covered by the report can identify deficits in water sector policies that should be addressed to improve water governance. The results can be used to embark on country-level stakeholder discussions to identify areas where more concerted and participatory actions are needed. Countries not surveyed in the report can apply the survey methodology as a framework to analyze their own water governance system and identify areas where increased effort is needed to accelerate progress in achieving the MDGs.

¹ The full document is available at: http://www.un.org/esa/sustdev/documents/docs_csd13.htm

Table of Contents

	Preface	
1	Introduction	1
2	Methodology	2
2.1	The CSD-13 policy action list	2
2.2	Design of the survey	5
2.3	Structuring the analysis	5
3	Results at Global Level	7
3.1	By sector	7
3.2	By policy category	9
3.3	Supra-national policy actions	12
3.4	Comparison with UN Water IWRM survey	12
4	Results at Country Level	14
4.1	Summary of results at country level	14
4.2	Country Atlas	17
5	Brief Analysis	53
5.1	Linking context, policy implementation and outcomes	53
6	Conclusions	59
	Annex 1: List of CSD-13 policy actions on water and sanitation	61
	Annex 2: Survey methodology	65
	Annex 3: Context and outcomes indicators	67
	Annex 4: Supra-national policy actions	75

List of Acronyms and Abbreviations

Abbre- viation	Text	www. Links for further information
AF	Africa	
AfWA	African Water Association	
AMCOW	Africa Ministers Council on Water	http://www.amcow.org/
AMCOW TAC	AMCOW Technical Advisory Committee	
AS	Asia	
ANBO	African Network of Basin Organizations	
ANEW	African Network of Civil Society on Water	
AWF	African Water Facility	http://www.afdb.org/awf
BD	Biodiversity	
BOT	Build Operate Transfer	
CIA	Central Intelligence Agency	https://www.cia.gov/library/publications/the-world-factbook/
CBO	Community Based Organization	
CILLS	Comité Permanent Inter Etats de lutte contre la Sécher- esse dans le Sahel	
CC	Climate Change	
CSD	Commission on Sustainable Development	http://www.un.org/esa/sustdev/csd
ECOSAN	Ecological Sanitation	
EE	Eastern Europe (applying to sample countries of this survey: Albania and Bulgaria)	
EUWF	European Union Water Facility	
EUWI	European Union Water Initiative	
FAO	Food and Agriculture Organization of the United Na- tions	http://www.fao.org/
GDP	Gross Domestic Product	
GEF	Global Environment Facility	http://www.gefweb.org/
GIRWI	Global Initiative for Rationalising Water Information	
GLAAS	Global Annual Assessment on Sanitation and Drinking Water	
GNP	Gross National Product	
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit	
HDI	Human Development Index	
IB-NET	International Benchmarking Network for Water and Sanitation Utilities	http://www.ib-net.org/
IHE	UNESCO-IHE Institute for Water Education	http://www.unesco-ihe.org
IPCC	Intergovernmental Panel on Climate Change	http://www.ipcc.ch/
IWCAM	Integrating Watershed and Coastal Area Management	
IWRM	Integrated Water Resources Management	
JMP	Joint Monitoring Programme for Water Supply and Sanitation	http://www.who.int/water_sanitation_health/monitoring/jmp04_5.pdf
JPOI	Johannesburg Plan of Implementation	http://esa.un.org/iys/jpoi.shtml
LA	Latin America	
LD	Land Degradation	
NEPAD	The New Partnership for Africa's Development	
NGO	Non-Governmental Organization	
O&M	Operation and Maintenance	
OC	Oceania	
ODA	Official Development Assistance	
PAWS	Partners for Water and Sanitation	
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia	
PIC	Pacific Island Countries	
POPs	Persistent Organic Pollutants	
PRSP	Poverty Reduction Strategy Paper	http://www.imf.org/external/np/exr/facts/prsp.htm
RDI	Research Development and Innovation	
RWSSI	Rural Water Supply and Sanitation Initiative (AfDB)	
SIDS	Small Island Developing States	
SIWI	Stockholm International Water Institute	www.siwi.org
TA	Technical Assistance	
UAWS	Union of African Water Suppliers	

UNDESA	United Nations Department of Economic and Social Affairs	http://www.un.org/esa/desa/
UNDP	United Nations Development Programme	
UNEP	United Nations Environment Programme	
VBA	Volta Basin Authority	
WASH	Water, Sanitation and Hygiene for all (WSSCC initiative)	http://www.wsscc.org/
WS	Water Supply	
WSS	Water Supply and Sanitation	
WSSCC	Water Supply & Sanitation Collaborative Council	http://www.wsscc.org/
WUA	Water User Association	
WUP	Water Utility Partnership for Capacity Building in Africa	
WWU	Water & Waste water Utility	

List of Figures

Figure 1: Countries selected for the survey and regional groupings	5
Figure 2: From context to outcomes, the policy link	6

List of Boxes

Box 1: Hygiene education in Albania	8
Box 2: Participation in Latin America	11
Box 3: Planning in Samoa	11
Box 4: Examples of good implementation	55

List of Tables

Table 1: Sectors	2
Table 2: Policy categories	3
Table 3: Scope of data analysis	5
Table 4: Scope of sector analysis	7
Table 5: Scope of analysis by policy category	9
Table 6: Level of implementation of supra-national policy actions	12
Table 7: UN Water survey on IWRM – policy blocks	12
Table 8: Scope of analysis by sector and policy category for each country	14
Table 9: Synoptic view of level of implementation of CSD-13 policy actions for each country	15
Table 10: Synoptic view of country results along with context and performance	16
Table 11: Scope of analysis by country context	54
Table 12: Grouping countries according to policy implementation and relative performance	57

List of Graphs

Graph 1 (a,b,c): Level of implementation of CSD-13 policy actions by sector	7
Graph 2 (a,b,c): Level of implementation according to the five attributes surveyed	8
Graph 3 (a,b,c): Level of implementation by category of policy action	9
Graph 4 (a,b,c): Level of implementation in 11 policy categories by region	10
Graph 5: Level of implementation of policy categories in the sanitation, water supply and IWRM sectors	11
Graph 6: UN Water survey and UN DESA survey scores on IWRM	13
Graph 7: (a,b) Level of implementation of CSD-13 policy actions in relation to HDI	53
Graph 8 (a,b,c): Level of implementation in relation to country context	54
Graph 9 (a,b): Relative performance index and level of implementation of CSD-13 policy actions	56
Graph 10: Mapping the water supply relative performance of countries	57

1 Introduction



Recent monitoring reports on water supply and sanitation coverage¹ show that the pace of policy implementation varies greatly between regions. While Asia and Latin America are on track to achieve the targets set forth in the MDGs, the African continent is lagging behind. Sanitation, in particular, lacks the attention it requires.

Although insufficient funding from ODA and national budgets is a key cause of the problem, a deficiency of sound governance in the water sector in many countries is also a decisive factor. During the World Summit in Sustainable Development in Johannesburg, indicators for Water Resources Management were added to the targets of the global water agenda. It is evident that country-level policy decisions are substantive drivers in achieving quantifiable improvements in the water sector.

The 13th session of the Commission for Sustainable Development (CSD), held in New York in April 2005, agreed on such policy decisions to expedite the implementation of the global water and sanitation agenda. The negotiated agreements set forth policy actions for governments to improve management of water and sanitation sectors. It is important to note that this CSD-13 policy action list³ is to be considered in the context of each country; it is not a normative list, but a set of options proven to help encourage development in the area of water and sanitation.

The 16th session of the CSD, held in New York in May 2008, reviewed the progress made in the implementation of decisions made at CSD-13 on water and sanitation^{4, 5}. Among the documents presented at CSD-16, the “Status Report on Integrated Water Resources Management and Water Efficiency Plans” prepared by UN-Water is particularly relevant to the present survey and its IWRM findings. The results of the present survey complement the CSD-16 discussions, which addressed the whole water sector.

This report presents the findings of a project under the Global Initiative for Rationalizing Water Information (GIRWI) designed by the United Nations Department of Economic and Social Affairs (UN DESA) and funded by the Government of Italy. This report assesses the extent to which the CSD-13 policy actions on Integrated Water Resource Management (IWRM), Water Supply and Sanitation have been implemented at the global level.

This report assesses the extent to which the CSD-13 policy actions on Integrated Water Resource Management (IWRM), Water Supply and Sanitation have been implemented at the global level.

2 2008 JMP report

3 The CSD-13 Policy Actions are contained in the Report on the 13th session of the Commission on Sustainable Development (held in New York) (United Nations document no. E/CN.17/2005/12)

4 The Chairman’s Summary of CSD-16 is available at <http://www.un.org/esa/sustdev/csd/>

5 Report of the United Nations Secretary-General “Review of progress in implementing the decision of the thirteenth session of the Commission on Sustainable Development on water and sanitation” (United Nations document no. E/CN.17/2008/11)

2 Methodology



The project was carried out in two phases:

Phase 1 – Definition of the survey methodology and selection of countries to be sampled.

Phase 2 – Implementation of the survey in 35 countries and synthesis of results.

In addition to creating, analyzing and comparing data, the survey provided a methodological framework that could be utilised in future monitoring exercises.

The first phase was implemented in 2007, the second in 2008. Both phases were contracted by UN DESA and executed by the Stockholm International Water Institute (SIWI). The survey methodology was validated at a project reference group workshop⁶ convened by UN DESA in 2007. In addition to creating, analyzing and comparing data, the survey provided a methodological framework that could be utilised in future monitoring exercises.

The approach followed in this project differs in many ways from other monitoring exercises undertaken in the water sector. Specific differences include the extent of topics covered, the nature of the data collected, as well as the data collection process. The survey covers a large spectrum of sectors (Water Supply, IWRM, and Sanitation) and policy areas (capacity, knowledge, hardware, governance). The data collected includes qualitative assessments on policy implementation as government officials were interviewed in most countries studied. However, the survey itself was conducted by independent experts, who analyzed official government documents and interviewed government officials to derive a synthesis. In order to obtain comparable results, the expert reports were validated under strict criteria to ensure consistency and homogeneity.

2.1 The CSD-13 policy action list

The CSD-13 policy action list comprises 15 policy options, grouped in five broad sector blocks⁷ (Table 1). Each policy option includes a number of policy actions. The CSD-13 report identified 72 policy actions (see Annex 1 for a complete list and http://www.un.org/esa/sustdev/documents/docs_csd13.htm for the original document). Seven policy actions were intended for the supra-national level, while the remaining 65 have national-level applicability.

Table 1

Sector blocks as defined in the CSD-13 report

- | |
|-------------------------------------|
| 1. Access to basic water services |
| 2. IWRM |
| 3. Access to basic sanitation |
| 4. Sanitation and hygiene education |
| 5. Wastewater treatment and re-use |

Table 1:
Sector blocks

The national-level policy actions have been grouped into substantive policy categories (four main blocks subdivided into 11 categories, Table 2) which cut across the broad sector blocks. Consequently, each policy action falls into a sector block and belongs to a policy category.

Table 2	
Main category blocks	Policy categories
Capacity	1. Awareness raising
	2. Education and training
	3. Participation management
Knowledge	4. Knowledge management
	5. Research development
Hardware	6. Technologies
	7. Infrastructure
Governance	8. Monitoring tools
	9. Economic tools
	10. Institutional aspects
	11. Planning aspects

Table 2:
Policy categories

Each policy action has been interpreted as a potential “programme component” for achieving a specific change. A few explanatory “programme elements” could therefore be derived from the original formulation of the policy actions, such as:

- The target area (Actors/management functions which are intended to be impacted through the implementation of the policy action).
- The expected outputs (Concrete, exemplary outputs that are expected to be delivered through the implementation of the policy action).

2.2 Design of the survey

The survey design included interviews, desk studies and country studies. Implementation of the seven “supra-national” policy actions was assessed through desk investigations. Implementation of national-level policy actions was assessed through a survey of 35 sample countries.

2.2.1 Country survey methodology

The assessment of the implementation of national-level policy actions was carried out by national experts through country surveys. Since no baseline was available, the assessment was deliberately static. This means that the survey assesses the “status” of implementation of the CSD-13 action list and does not provide any indication as to what might have changed since 2005, when the CSD-13 policy actions were formulated. The survey simply shows whether or not a given policy action on the CSD-13 action list was, at the time of the study, implemented in a given country. It does not make a distinction between policy actions that relate to the endorsement of the CSD-13 action agenda, and policy actions that do not. Policy actions may well have been initiated before 2005, through a policy process unconnected to CSD-13.

Country surveys were carried out by means of a semi-structured questionnaire. The level of implementation of each policy action was assessed according to a detailed analysis of five attributes:

I	Existence of policy measures (e.g. training courses, strategies, subsidy-schemes)
II	Quality of the measures in place (e.g. through clear objectives)
III	Range of target area (level of participation and range of management functions considered)
IV	Scale of implementation (from pilot project level to countrywide implementation)
V	Sustainability (as it relates to national institutionalization and financing only)

Each one of these attributes was given a score of 0 or 1, leading to a total score of 0 to 5 for each policy action. This score was then systematically translated into a score of 0 to 100 % (e.g. a score of 4 represents 80 %). The score for each attribute was supported in written form by objective evidence (documents, laws, interviews with key informants etc.) where possible.

In addition, the experts provided an overview report on the mapping of the national water and sanitation sectors, which they used to identify potential sources of information and key actors to be interviewed. All quantitative data used for the analysis, and all qualitative data presented in the country atlas and in illustrative boxes, is drawn from the reports of national experts.

In order to verify the assessments made, the project team communicated extensively with national experts and reviewed draft surveys. Coherence between scores and written justifications (objective evidence) and between justifications and the corresponding policy action statement was cross-checked. Nevertheless, the survey results are subjective and should be considered with the usual caution. The survey methodology was designed to collect country specific information through direct field investigation. The data collected is used for comparative illustrations in the present report. However, given that the assessment was conducted by different experts and in varying national contexts, objective and normative ranking between countries is not deemed to be useful. Additional information on the survey methodology, including its limitations, is provided in Annex 2.

As a rough test of robustness, the findings of this survey can be compared with relevant findings of the UN-Water survey on “Integrated Water Resources Management and Water Efficiency Plans” (2008). Twenty out of the 35 countries surveyed in this project were among the 104 countries studied in the UN-Water survey. The results on IWRM implementation from both surveys are indeed consistent (see section on global results).

2.2.2 Countries selected for the survey

The country selection was intended to reflect the status of implementation of CSD-13 policy actions in different geographic regions. In addition, the selection was guided by the level of human, economic, social, institutional, and environmental development, as well as the country’s standing in the achievement of the MDGs and other water related targets.

2.2.2.1 A wide geographical spread

Thirty-five countries in 14 geographical sub-regions of the world were selected by UN DESA for the survey (Figure 1).



2.2.2.2 Diverse water and sanitation sectors

The 35 countries selected have a wide spectrum of human, natural, and economic resources potentially available for the development of their water and sanitation sectors. This diversity is captured by a set of 11 indicators, selected to build country water-related “context” profiles (see Annex 3 and chapter 4.2 ‘Country Atlas’). The countries sampled also cover a wide range of outcomes and performance⁹ in the water and sanitation sectors. The diversity of outcomes is captured by a set of ten indicators, selected to build country water and sanitation sectors “outcomes” profiles (see Annex 3 and the ‘Country Atlas’).

The 35 countries selected have a wide spectrum of human, natural, and economic resources potentially available for the development of their water and sanitation sectors.

Figure 1:
Countries selected for the survey and regional groupings⁸

2.3 Structuring the analysis

2.3.1 Survey data

The data at country level allows a relatively detailed analysis of the level of implementation of each CSD policy action. The overall data set can be broken down into policy actions and countries (Table 3).

The sector blocks and the policy categories in the CSD-13 action list (Table 1 and 2) provide a framework for consolidated analysis. The countries analysis can be performed:

- for the complete set of policy actions,
- for groups of policy actions, or
- for selected policy actions.

The policy actions analysis can be performed:

- for all 35 countries,
- for groups of countries, or
- for selected countries.

The regional groupings (Figure 1) can be used but further work on alternate country groupings is needed for a consolidated analysis (see below).

Assessment:	For the whole set of countries	For groups of countries	For a single country
For all policy actions	The level of implementation can be assessed globally and/or further qualified by considering the scoring as defined by the five attributes: existence, quality, range, scale and sustainability		
For groups of policy actions			
For a single policy action			

Table 3:
Scope of data analysis

The following sections of the report will analyze data, with reference to the various dimensions shown in Table 3.

2.3.2 Characterising countries

Geographical groupings of countries are not sufficient for a meaningful discussion of policy choices and their level of implementation. As explained below and further in Annex 3, countries have been characterised by sector context and performance¹⁰ in order to better structure the analysis¹¹.

2.3.2.1 Sector Context

The Human Development Index (HDI) along with 11 other indicators, has been selected to characterise the country context.

The Human Development Index (HDI), one of 11 indicators documented in the context profile, has been selected to characterise the country context. Countries with a high HDI are considered to have a favourable sector context. Countries with lower HDI are regarded accordingly. The context emphasises the existence of certain conditions, which may or may not translate into outcomes for the sector. It is well understood that other indicators could be used and that a systematic selection would imply a thorough mapping of the many potential drivers of the performance of the water sector. HDI was chosen primarily for its wide acceptance and for the benefit of simplicity.

2.3.2.2 Sector Performance

Access to sanitation and access to water supply services (two of the 10 indicators documented in the outcomes profile) have been selected to characterise the sector performance. Countries which do well in terms of these two indicators are considered to have high-performance sectors. Countries which score lower in terms of the indicators are classified accordingly. The study took into account that the CSD-13 recommendations are meant to cover the whole water sector (including for example wastewater treatment, water use for agriculture, water pollution through industries, etc.). The water and sanitation focus was primarily chosen due to the relative emphasis given to these issues in the CSD-13 policy action list.

2.3.3 Main question for analysis

Taking into account context specific variables, it is valuable to explore the links between the level of implementation of CSD-13 policy actions and the performance of water and sanitation sectors. Quality data on this topic enables discussions that address the key question: Is the performance of the water and sanitation sectors related to the level of implementation of the CSD-13 policy actions? (see schema on interaction in Figure 2).

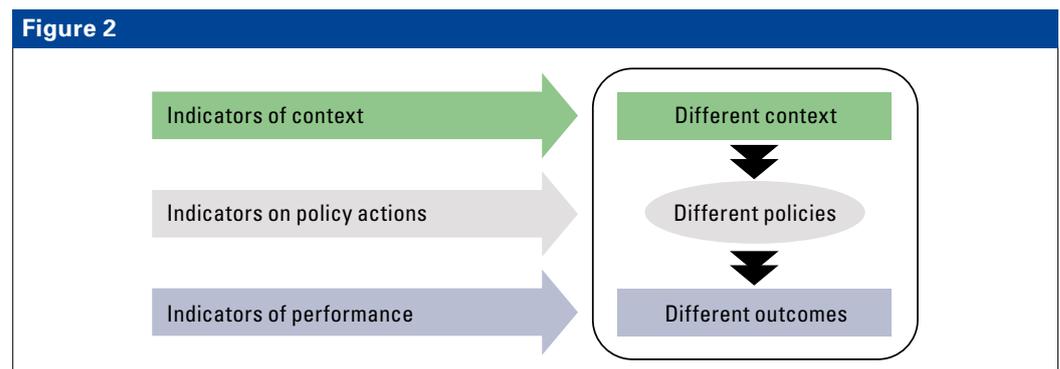


Figure 2:
From context to outcomes,
the policy link

- 6 The reference group was constituted of international actors involved in global water monitoring exercises e.g. AfDB, EUWI, GWP, JMP, WSP and bilateral agencies (DFID, GTZ, USAID)
- 7 The term “water and sanitation sectors” used in this report refers to the whole sectoral spectrum. Both “resources” and “services” aspects are therefore included in this definition.
- 8 The designation employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.
- 9 The term “outcome” is defined as “any effect – direct or distant, short-term or medium-term – of an intervention’s outputs”. When analyzed in relation to the inputs mobilised and the objectives assigned to the intervention, the outcomes allow introduction of the notion of “performance” along the usual dimensions of efficiency, effectiveness, and impact.
- 10 The terminology “country context”, “country performance” and “country relative performance” is used in the subsequent sections of the report, without reference to a sector. It is understood that it refers to the water and sanitation sectors.
- 11 Related work has been undertaken by the Economic Commission of West African States (ECOWAS) on IWRM monitoring. Please refer to Rey et al. (2008) “Defining IWRM indicators via a managerial approach, case study in West Africa”, IWRA congress, September 2008 http://wwwc2008.msem.univ-montp2.fr/resource/authors/abs436_article.pdf.

3 Results at Global Level



The CSD-13 policy actions list is diverse and covers numerous aspects of water and sanitation. As mentioned before, the CSD-13 policy actions list is the result of negotiation and has been recognised by all countries as a “good” list (in a soft normative sense). The relevance of the policy actions was therefore not raised in the survey. However, the analysis of country data provided by national experts indicates that lack of implementation could be explained, in some cases, by the fact that policy actions do not match the conditions prevailing in a given country. Such cases are, nevertheless, relatively few and do not significantly alter the quantitative analysis provided in the report. A low score means that a country has low policy implementation, and signals a gap between what has been agreed at CSD-13 achieved.

3.1 By sector

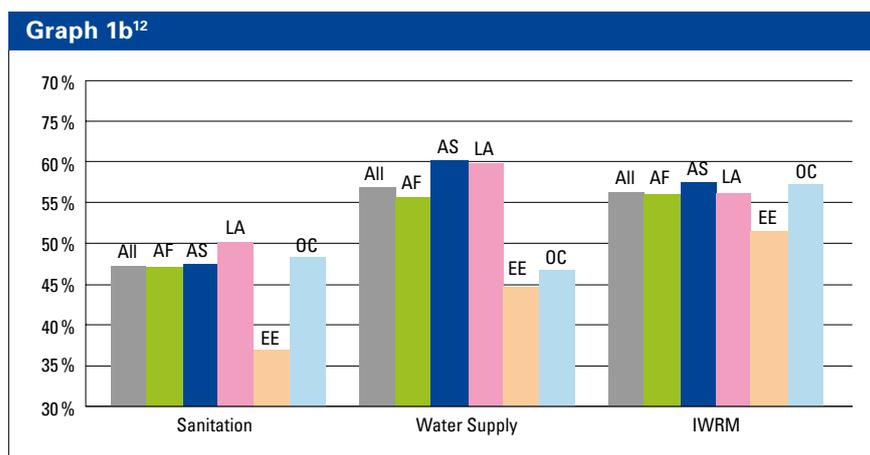
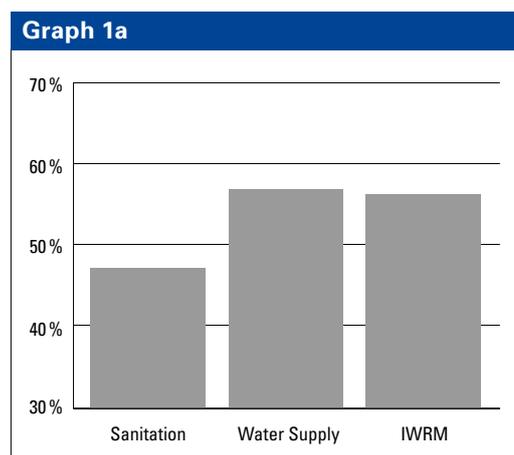
The level of implementation of the CSD-13 policy actions by sector was analyzed by countries and regions (Table 4).

Assessment:	All countries	Group region	Group context	Group performance	One country
All policy actions					
By sector	X	X			
By category					
One policy action					

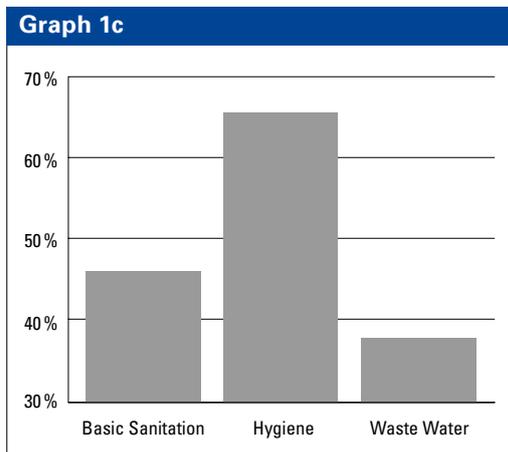
Table 4:
Scope of sector analysis

Graphs 1a and 1b show the level of implementation of the policy actions by sector for the 35 countries (Graph 1a) and by sector for the five regions (Graph 1b). Graph 1c shows the sanitation sector broken down into the three components: basic sanitation, hygiene and wastewater management (in accordance with the CSD-13 list of policy actions).

Graph 1 (a,b):
Level of implementation of
CSD-13 policy actions by sector



The implementation of policies on sanitation lags behind those on water supply and water resources management.



Graph 1c:
Level of implementation of CSD-13 policy actions by sector

Comments

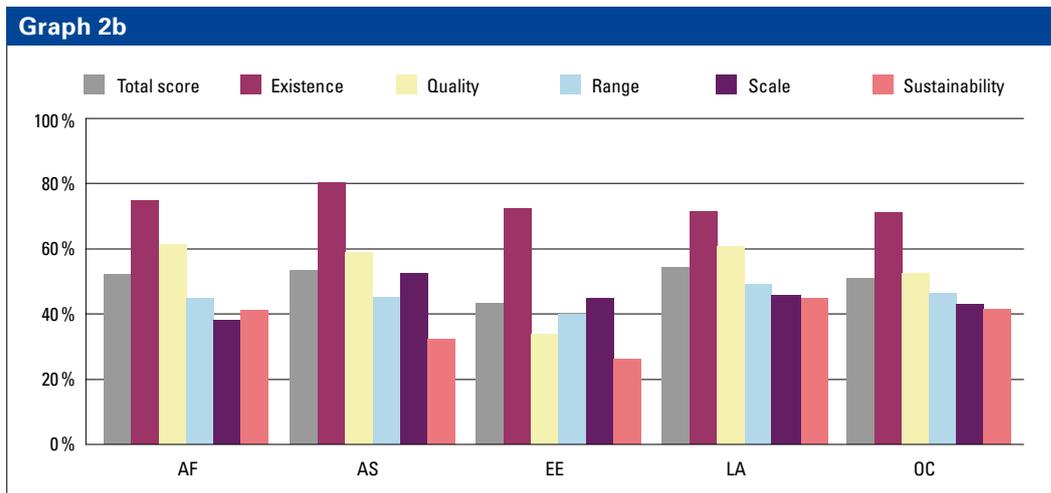
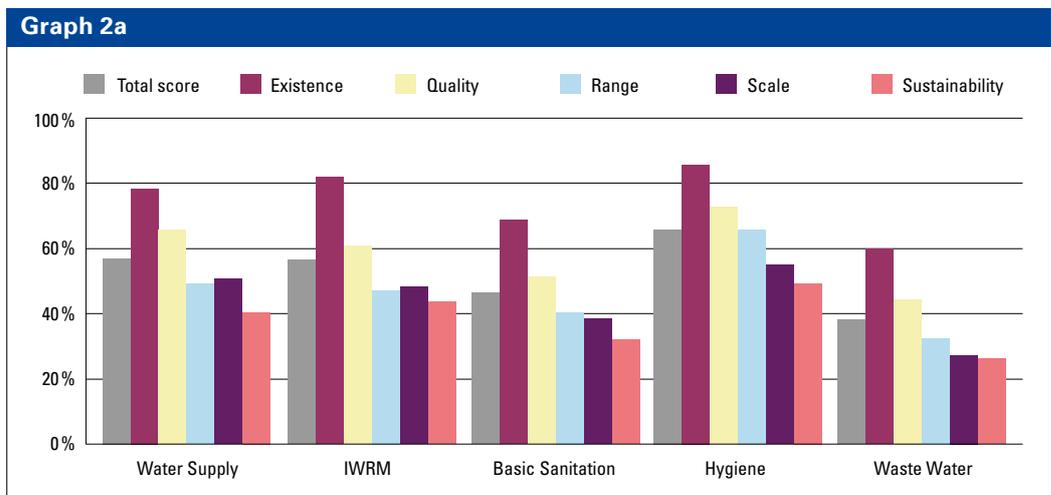
Implementation in the sanitation sector is lower than in the water supply and IWRM sectors.
The implementation of policy actions relating to hygiene education is relatively high – see Box 1 (assessed on four policy actions only).
The overall score for Eastern Europe (only two countries: Albania and Bulgaria) is relatively low compared to other regions.

**Policy Action 58:
Education on hygiene and separate sanitation facilities – the case of Albania**

In Albania, there are legal standards for water supply, sanitation and hygiene in schools. Basic personal hygiene is on the curriculum and there are separate toilets for boys and girls in all urban and almost all rural areas. These regulations are part of the national strategy for education, and are obligatory in all schools. The separate sanitation facilities are financed by the Ministry of Education.

Box 1:
Hygiene education in Albania

Graphs 2a, 2b and 2c show the level of implementation of the policy actions by sector (Graph 2a) and region (Graphs 2b and 2c), according to the five attributes surveyed (existence, quality, range, scale, sustainability).



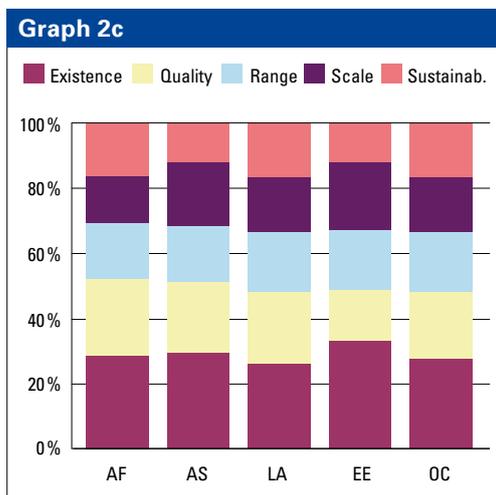
Graph 2 (a,b):
Level of implementation according to the five attributes surveyed

Comments

The scores for the attributes are as might be expected: about 70 % for existence, 50 % for quality, 40 % for range and scale, and 35 % for financial and institutional sustainability.

The scores for the five attributes are fairly similar across regions. The sustainability attribute scores slightly lower in Asia than in the two other “large” regions, Africa and Latin America.

The two Eastern European countries surveyed have relatively low scores on quality and sustainability.



Graph 2 (c): Level of implementation according to the five attributes surveyed

Examining the level of implementation of each policy action with respect to the five attributes emphasises the difference between “existence” and “sustainability”. The score for “sustainability” is about half the score for “existence”. In many cases, some policy action has been taken, but in the form of projects with limited timeframes or plans that still need to be funded. In this case it is premature to conclude about the sustainability of the action undertaken, and it raises the issue of financial and institutional sustainability of donor-funded projects, especially for those which are not backed by due institutional and financial support from national governments.

In many cases, some policy action has been taken, but in the form of projects with limited timeframes or plans that still need to be funded. In this case it is premature to conclude about the sustainability of the action undertaken.

3.2 By policy category

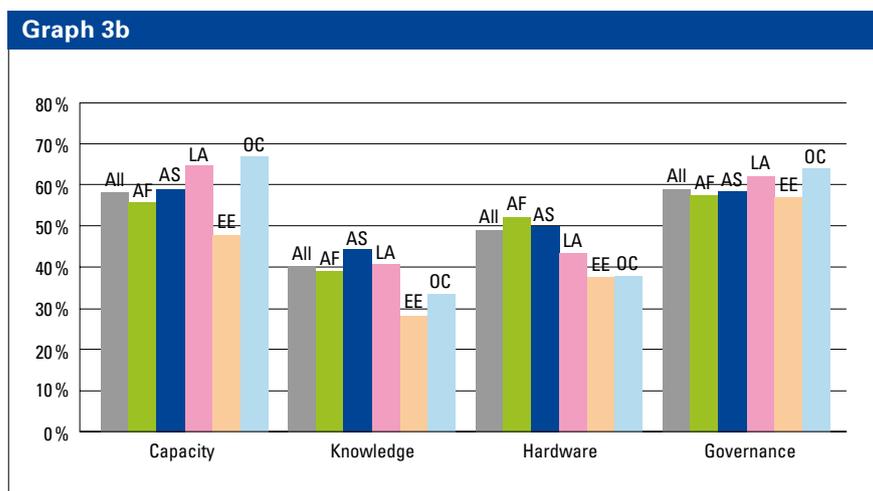
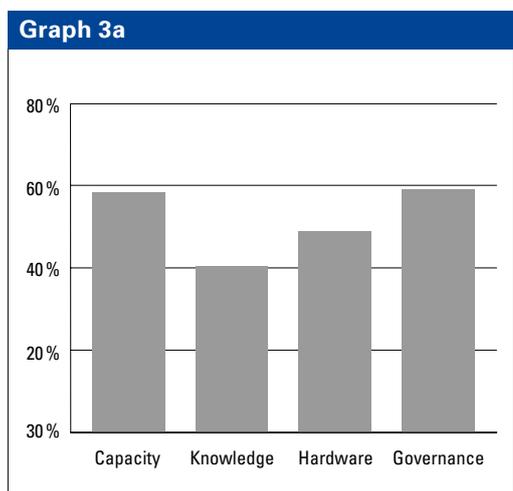
The level of implementation of the CSD-13 policy actions by policy category was analyzed for all countries and for the five CSD regions (Table 5).

Assessment:	All countries	Group region	Group context	Group performance	One country
All policy actions					
By sector	X	X			
By category	X	X			
One policy action					

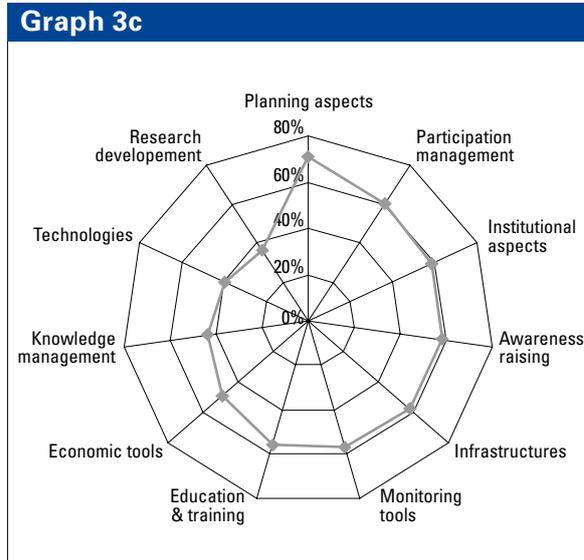
Table 5: Scope of analysis by policy category

Graphs 3a and 3b show the level of implementation of policy actions by category blocks for the 35 countries (Graph 3a) and for the five regions (Graph 3b). Graph 3c shows the level of implementation for the 11 policy categories for the 35 countries.

Graph 3 (a,b): Level of implementation by category of policy action



Governance and capacity building receive greater attention in water and sanitation policies than knowledge or hardware.



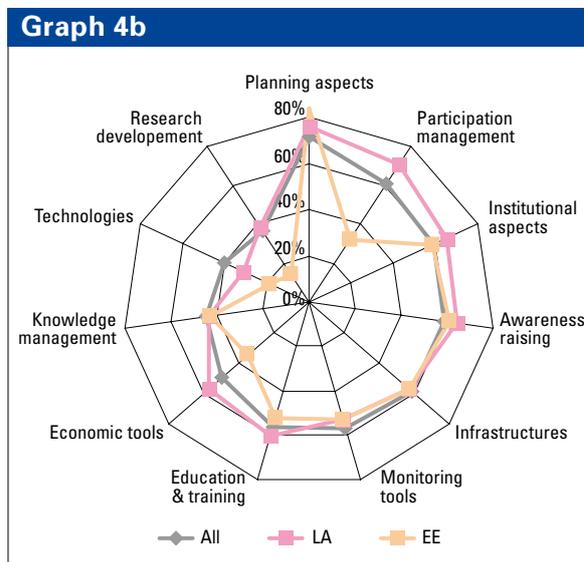
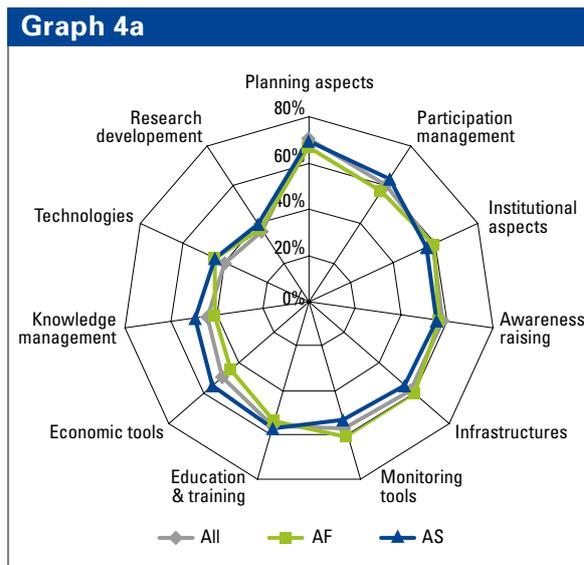
Comments

Governance and capacity building score higher than knowledge or hardware.

“Planning aspects” get the highest score, “research development” the lowest.

Graph 3 (c):
Level of implementation by category of policy action

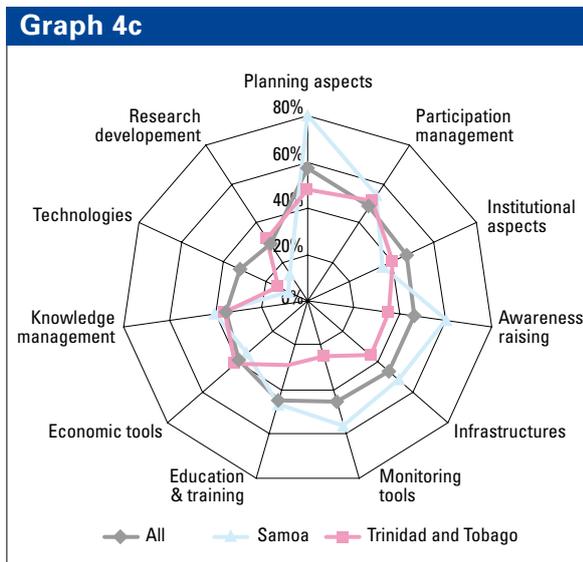
Graphs 4a, 4 b and 4c show the level of implementation for the 11 policy categories by region. Africa and Asia, which constitute the bulk of the sample, are presented together on Graph 4a. Latin America and Eastern Europe are presented on Graph 4b and the two island states in the survey, Samoa (the only country in the sample from Oceania) and Trinidad and Tobago (already included in Latin America) are presented on Graph 4c.



Graph 4 (a,b):
Level of implementation in 11 policy categories by region

Comments

Implementation levels in Asia and Africa follow a similar pattern and influence the pattern of the whole sample (together these two regions include 26 countries out of the 35 surveyed). Latin America and Eastern Europe have specific differences, notably in participation management (Latin America is stronger than the sample – see Box 2, Eastern Europe is weaker). Eastern European countries (Bulgaria and Albania) score remarkably low on research and technologies. The two island states have unique profiles. Samoa has placed strong emphasis on planning – see Box 3 and awareness raising.



Graph 4 (c):
Level of implementation in 11 policy categories by region

**Policy Action 48:
The role of women in sanitation management – the case of Mexico**

The Mexican federal Programme for Water and Sanitation Services in Rural Localities recognises the role of women and encourages their involvement in the local committees responsible for sanitation management. In the rural localities benefited by the Programme, workshops are held to strengthen the participation of women in planning, decision-making and management processes. The Programme provides comprehensive guidelines on how to establish a local committee and boost the involvement of women. Training programmes, included in each project budget, ensure sustainability.

Box 2:
Participation in Latin America

**Policy Action 39:
Institutional home for sanitation – the case of Samoa**

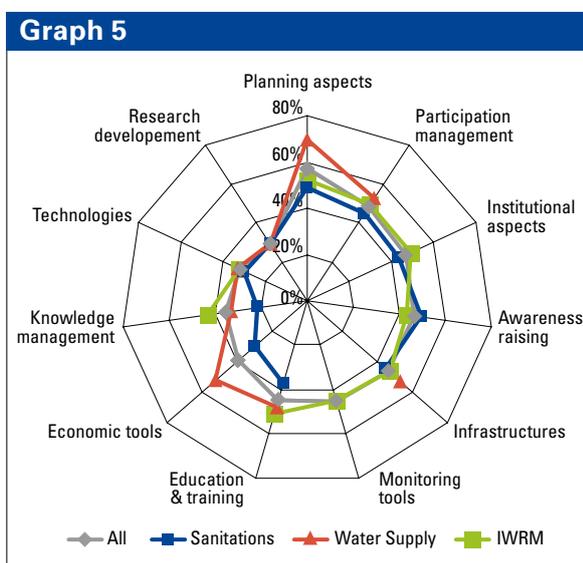
In Samoa, sanitation and wastewater disposal are fully covered under Priority Area 1 in the Strategy for the Development of Samoa (SDS) and are included in the National Water Resources Management Strategy. A sector-wide approach incorporates sanitation into IWRM. The SDS links sanitation and wastewater management to achieving the MDGs. The planning documents identify all relevant key-players, including ministries, and cover the whole country. The water and sanitation sectors are targeted for considerable donor support.

Box 3:
Planning in Samoa

Graph 5 shows the level of implementation of policy actions by category, for the sanitation, water supply and IWRM sectors.

Comments

Scores in the sanitation sector are low for policies in education and training, economic tools and knowledge management. In the water supply sector, scores are particularly high in the planning and economic tools policy categories.



Graph 5:
Level of implementation of policy categories in the sanitation, water supply and IWRM sectors

The CSD-13 policy action list emphasises the need for locally owned research, and transfer of technologies adapted to the context in which they will be used. The analysis shows that these important areas are not getting the attention they deserve.

In the areas of planning and capacity building the policy reforms seem to be in their early stages and cannot necessarily be expected to immediately translate into concrete outcomes.

In the areas of planning and capacity building policy reforms seem to be in their early stages and cannot necessarily be expected to immediately translate into concrete outcomes.

3.3 Supra-national policy actions

Annex 4 provides a brief overview of the level of implementation of the seven supra-national policy actions. Each constitutes an area of investigation in itself and deserves a more thorough treatment than has been given in this survey. Table 6 shows a preliminary overall assessment (level of implementation satisfactory = green, average = yellow, low/unclear = pink) of implementation of the supra-national policy actions.

Table 6	
Support the development of IWRM plans	Satisfactory
Use Multilateral Environmental Agreements as leverage	Average
Support African initiatives in the area of water	Satisfactory
Support trans-boundary agreements	Average
Support awareness campaigns on sanitation	Low/unclear
Technical Assistance on wastewater collection treatment and reuse	Low/unclear
Regional water resources protection	Low/unclear

Table 6:
Level of implementation of
supra-national policy actions

3.4 Comparison with UN Water IWRM survey

The UN Water survey on the level of implementation of IWRM deals with nine national-level policy blocks (Table 7).

Table 7	
Main national instruments	
Other national federal strategies	
Water resource development	
Water resource management	
Water Utilization	
Monitoring, information management & dissemination	
Capacity building and enabling environment	
Stakeholder participation	
Financing	

Table 7:
UN Water survey on IWRM –
policy blocks

An overall score for implementation of IWRM was obtained by averaging the country scores in these nine policy blocks (scale 0 % - 100 %). Graph 9 plots the scores in the UN Water survey against the scores in the UN DESA survey for the IWRM policy block (using the same 0 % - 100 % scale).

Comments

A reasonable similarity is observed between the results of the two surveys, within ± 17 per cent range, for 14 out of 20 countries.

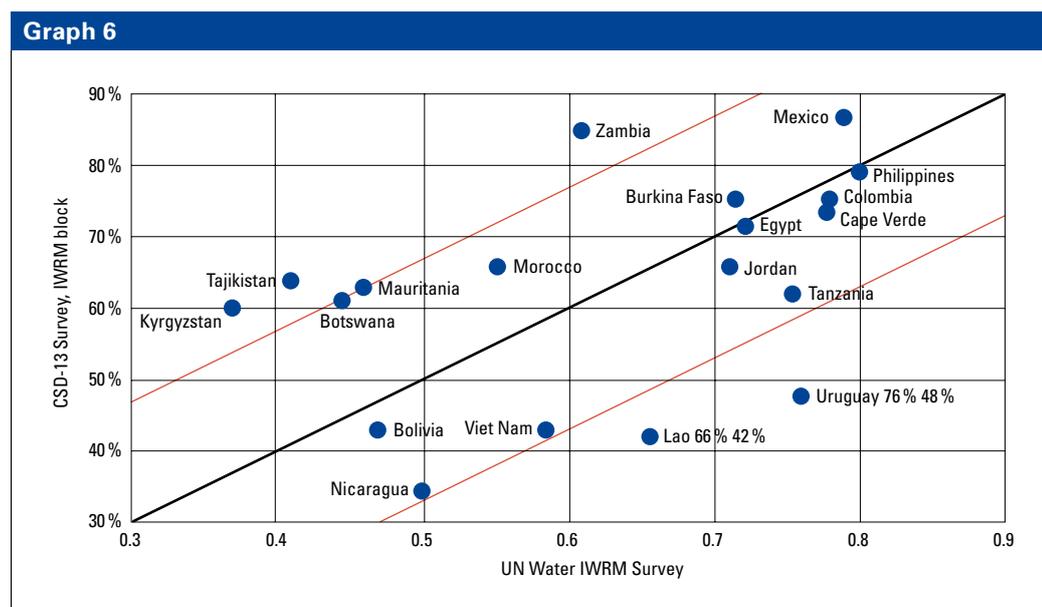
The results of the surveys seem to differ in six countries. The UN DESA survey found IWRM policy implementation comparatively:

- higher for Tajikistan, Kyrgyzstan and Zambia
- lower for Uruguay, Lao and Mozambique (27 per cent gap, not shown on graph)

The two surveys collected different information by different methods, but the overall results on the level of implementation of IWRM policies are comparable¹³.

The UN Water survey was specifically commissioned for CSD-16. The UN DESA survey was conducted within the framework of the Global Initiative for Rationalising Water Information (GIRWI), which also aims to strengthen capacities to monitor the water sector. Both surveys aim to contribute to global efforts to monitor the water sector¹⁴ and an analysis of their relative strengths and weaknesses could enrich the debate on how to consolidate these efforts.

The UN-Water IWRM survey and this study collected different information by different methods, but the overall results on the level of implementation of IWRM policies are comparable.



Graph 6: UN Water survey and UN DESA survey scores on IWRM

12 AF: Africa; AS: Asia; LA: Latin America; EE: Eastern Europe; OC: Oceania

13 It should be noted that comparing the UN-Water results with the total score of the CSD-13 survey (instead of the IWRM block only) would lead to a broadly similar conclusion. What we observe in both surveys seems to be a hierarchy in terms of maturity level in the overall water and sanitation sectors.

14 These efforts include i.e. the work of UN-Water and its three major assessment reports: (1) The triennial World Water Development Report, (2) the WHO/UNICEF Joint Monitoring Programme (JMP), and (3) The Global Annual Assessment on Sanitation and Drinking Water (GLAAS), which was presented for the first time in 2008.

4 Results at Country Level



4.1 Summary of results at country level

The level of implementation of the CSD-13 policy actions was analysed by sector and by main policy block for each country of the sample (Table 8).

Table 8					
Assessment:	All countries	Group region	Group context	Group performance	One country
All policy actions					X
By sector					X
By category					X
One policy action					

Table 8:
Scope of analysis by sector and policy category for each country

Table 9 provides a synoptic view of the level of implementation of CSD-13 policy actions by country. The colour code used is the same across the whole table:

Level of implementation < 0.5
0.5 ≤ Level of implementation < 0.8
Level of implementation ≥ 0.8

Table 10 provides a synoptic view of the level of implementation of CSD-13 policy actions within the perspective of country context (HDI) and country performance (access to water supply and sanitation).

The triple data set (country context, level of implementation of CSD-13 policy actions and country performance) is presented for the whole water and sanitation sectors, for the water supply and for the sanitation sectors separately. The thresholds governing the colour codes are given below.

HDI < 0.5
0.5 ≤ HDI < 0.8
HDI ≥ 0.8

WSS Access < 0.5
0.5 ≤ WSS Access < 0.8
WSS Access ≥ 0.8

WS Access < 0.7
0.7 ≤ WS Access < 0.9
WS Access ≥ 0.9

S Access < 0.4
0.4 ≤ S Access < 0.7
S Access ≥ 0.7

Table 9		CSD-13 Policy Action Sectors			Policy Categories of CSD-13 Survey			
Country	All policies	Sanitation	Water supply	IWRM	Capacity	Know-ledge	Hardware	Gover-nance
Bangladesh	54 %	48 %	59 %	60 %	66 %	47 %	47 %	57 %
Bolivia	50 %	57 %	48 %	43 %	89 %	25 %	30 %	45 %
Botswana	72 %	79 %	73 %	61 %	64 %	51 %	72 %	84 %
Bulgaria	43 %	36 %	47 %	51 %	53 %	39 %	31 %	52 %
Burkina Faso	65 %	48 %	83 %	75 %	74 %	61 %	68 %	60 %
Cape Verde	56 %	41 %	61 %	73 %	78 %	37 %	66 %	54 %
Chad	37 %	29 %	47 %	42 %	60 %	18 %	25 %	46 %
Colombia	62 %	55 %	59 %	75 %	59 %	41 %	59 %	79 %
Congo	21 %	23 %	39 %	4 %	31 %	13 %	17 %	14 %
Egypt	56 %	50 %	44 %	71 %	47 %	38 %	64 %	69 %
Ethiopia	44 %	42 %	49 %	44 %	49 %	40 %	45 %	45 %
Iran	76 %	88 %	71 %	63 %	74 %	75 %	74 %	79 %
Jordan	56 %	48 %	56 %	66 %	48 %	58 %	52 %	65 %
Kyrgyzstan	35 %	6 %	59 %	60 %	36 %	26 %	29 %	53 %
Lao	44 %	41 %	52 %	42 %	59 %	16 %	40 %	51 %
Madagascar	45 %	41 %	53 %	45 %	49 %	26 %	56 %	50 %
Mauritania	38 %	23 %	31 %	63 %	29 %	21 %	40 %	53 %
Mexico	79 %	72 %	81 %	87 %	81 %	68 %	71 %	88 %
Morocco	59 %	59 %	51 %	66 %	49 %	45 %	54 %	74 %
Mozambique	32 %	37 %	44 %	17 %	36 %	27 %	34 %	36 %
Nicaragua	41 %	40 %	51 %	34 %	64 %	23 %	29 %	45 %
Pakistan	86 %	83 %	89 %	89 %	92 %	70 %	87 %	94 %
Philippines	55 %	36 %	59 %	79 %	61 %	35 %	61 %	60 %
Rwanda	51 %	38 %	59 %	63 %	58 %	44 %	45 %	57 %
Samoa	51 %	48 %	47 %	57 %	67 %	34 %	38 %	64 %
Senegal	68 %	66 %	69 %	70 %	70 %	58 %	61 %	78 %
Sri Lanka	55 %	59 %	71 %	40 %	70 %	40 %	52 %	53 %
Tajikistan	60 %	59 %	57 %	64 %	70 %	59 %	49 %	60 %
Tanzania	61 %	61 %	60 %	62 %	63 %	60 %	56 %	65 %
Trinidad	41 %	27 %	56 %	50 %	48 %	43 %	24 %	51 %
Uruguay	52 %	49 %	64 %	48 %	46 %	47 %	49 %	65 %
Viet Nam	42 %	39 %	47 %	43 %	52 %	36 %	37 %	41 %
Yemen	26 %	17 %	43 %	28 %	21 %	28 %	22 %	30 %
Zambia	75 %	70 %	72 %	85 %	80 %	48 %	82 %	80 %

Table 9:
Synoptic view of level of im-
plementation of CSD-13 policy
actions for each country

The CSD-13 policy index is the level of implementation of the CSD-13 policy actions, rounded to one digit. The Sanitation access index (S access) is the JMP value of improved sanitation. The Water Supply access index (WS access) is the JMP value of improved water supply. The water supply and sanitation access index (WSS access) is established by averaging the sanitation and the water supply access indexes.

Table 10

Country	Context (HDI)			CSD-13 Policy Index			Perf. (WSS Access)		
	Context (HDI)	CSD-13 Policy Index	Perf. (WSS Access)	Context (HDI)	CSD-13 WS Pol. Index	Perf. (WS Access)	Context (HDI)	CSD-13 S Pol. Index	Perf. (S Access)
Albania	0.80	0.4	0.97	0.80	0.4	0.97	0.80	0.4	0.97
Bangladesh	0.55	0.5	0.58	0.55	0.6	0.80	0.55	0.5	0.36
Bolivia	0.70	0.5	0.65	0.70	0.5	0.86	0.70	0.6	0.43
Botswana	0.65	0.7	0.72	0.65	0.7	0.96	0.65	0.8	0.47
Bulgaria	0.82	0.4	0.99	0.82	0.5	0.99	0.82	0.4	0.99
Burkina Faso	0.37	0.6	0.43	0.37	0.8	0.72	0.37	0.5	0.13
Cape Verde	0.74	0.6	0.62	0.74	0.6	0.80	0.74	0.4	0.43
Chad	0.39	0.4	0.29	0.39	0.5	0.48	0.39	0.3	0.09
Colombia	0.79	0.6	0.86	0.79	0.6	0.93	0.79	0.6	0.78
Congo	0.55	0.2	0.46	0.55	0.4	0.71	0.55	0.2	0.20
Egypt	0.71	0.6	0.82	0.71	0.4	0.98	0.71	0.5	0.66
Ethiopia	0.41	0.4	0.27	0.41	0.5	0.42	0.41	0.4	0.11
Iran	0.76	0.8	0.91	0.76	0.7	0.94	0.76	0.9	0.88
Jordan	0.77	0.6	0.92	0.77	0.6	0.98	0.77	0.5	0.85
Kyrgyzstan	0.70	0.4	0.91	0.70	0.6	0.89	0.70	0.1	0.93
Lao	0.60	0.4	0.54	0.60	0.5	0.60	0.60	0.4	0.48
Madagascar	0.53	0.5	0.30	0.53	0.5	0.47	0.53	0.4	0.12
Mauritania	0.55	0.4	0.42	0.55	0.3	0.60	0.55	0.2	0.24
Mexico	0.83	0.8	0.88	0.83	0.8	0.95	0.83	0.7	0.81
Morocco	0.65	0.6	0.78	0.65	0.5	0.83	0.65	0.6	0.72
Mozambique	0.38	0.3	0.37	0.38	0.4	0.42	0.38	0.4	0.31
Nicaragua	0.71	0.4	0.64	0.71	0.5	0.79	0.71	0.4	0.48
Pakistan	0.55	0.9	0.74	0.55	0.9	0.90	0.55	0.8	0.58
Philippines	0.77	0.6	0.86	0.77	0.6	0.93	0.77	0.4	0.78
Rwanda	0.45	0.5	0.44	0.45	0.6	0.65	0.45	0.4	0.23
Samoa	0.79	0.5	0.94	0.79	0.5	0.88	0.79	0.5	1.00
Senegal	0.50	0.7	0.53	0.50	0.7	0.77	0.50	0.7	0.28
Sri Lanka	0.74	0.6	0.84	0.74	0.7	0.82	0.74	0.6	0.86
Tajikistan	0.67	0.6	0.80	0.67	0.6	0.67	0.67	0.6	0.92
Tanzania	0.47	0.6	0.44	0.47	0.6	0.55	0.47	0.6	0.33
Trinidad	0.81	0.4	0.93	0.81	0.6	0.94	0.81	0.3	0.92
Uruguay	0.85	0.5	1.00	0.85	0.6	1.00	0.85	0.5	1.00
Viet Nam	0.73	0.4	0.79	0.73	0.5	0.92	0.73	0.4	0.65
Yemen	0.51	0.3	0.56	0.51	0.4	0.66	0.51	0.2	0.46
Zambia	0.43	0.8	0.55	0.43	0.7	0.58	0.43	0.7	0.52

Table 10:
Synoptic view of country results
along with context and
performance

Comments

Country-level results reveal that the level of implementation of the CSD-13 policy actions is less homogeneous in the sanitation sector than in the water supply or IWRM sectors.

Country-level results reveal that the level of implementation of the CSD-13 policy actions is less homogeneous in the sanitation sector than in the water supply or IWRM sectors. Policy packages promoted at the international level in water supply and IWRM appear to have been more widely taken up. This heterogeneity could be related to a lack of maturity in the sanitation sector. This sector also displays some stark contrasts; some countries are considerably advanced while others have barely started to consider sanitation as an issue.

4.2 Country Atlas

In order to set the scene for a more detailed discussion and analysis of the country-level results, the Atlas provides information on the context, policies, and outcomes for each of the 35 countries surveyed. Short analyses of the water sector of each country, based on the reports provided by the national experts, are also included.

The data presented in each country summary is thus compiled from the following sources:

- The Profile and Outcomes indicators were documented using internationally available data sets (see Annex 3 for tables with all numerical values).
- The CSD-13 Policy actions indicators were documented using the results of the present UN DESA CSD-13 survey.
- The overall country analysis “Linking Policy to Performance” were documented using the analysis of the national experts of the UN DESA CSD-13 survey.

A simplified typology is introduced in the summary pages:

Coding and Explanation				Index		
-	HDI < 0.5	/	0.5 ≤ HDI < 0.8	+	HDI > 0.8	Context (HDI)
0.4	Level of implementation of CSD-13 Policy Actions (rounded to one digit)				CSD-13 Policy Index	
-	WSS Access < 0.5	/	0.5 ≤ WSS Access < 0.8	+	WSS Access > 0.8	Perf. (WSS Access)

The level of implementation of CSD-13 policy actions and the selected outcomes indicators are presented on two graphs in the country atlas. On these graphs, the individual country values are compared with the values of the “country group”. The latter represents the average values of all countries belonging to the group with an HDI similar to the HDI of the country considered (Low, Medium or High).

As explained above, country contexts and outcomes/performance have been introduced to help clarify the discussion on policies. Analysing policy choices in a given country without taking into account the context – available resources, constraints and opportunities – may hinder the debate on the relevance of these policy choices. Likewise, analysing policy implementation without considering water and sanitation outcomes may hinder discussions on the effectiveness of the policy actions in place. Analysing policies in the light of context and outcomes may not provide answers on relevance and effectiveness but will, at least, encourage discussions on the policies that may be adapted to the context in order to achieve desired outcomes.

Note: The designation employed and the presentation of material on the maps shown do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The methodology used for analysis builds on a conceptual framework that highlights the links among country context, policies implemented in a given sector, and the respective outcomes.

1. Albania



Profile			Typology	
Renewable water/y	m ³ /cap	13,031	Context (HDI)	+
Hydropower capability/y	TWh	15	CSD-13 Policy Index	0.4
Population	'000	3,200		
Urban population/total	%	45	Perf. (WSS Access)	+
Human development	index	0.801		
GDP (PPP)	\$/cap	5,316		
Contribution of agri. to GDP	%	23 %		
Investment climate	index	0.61		
ODA for water sector/y	\$/cap	5.58		
Storage capacity surface water	km ³	0.5579		
Irrigated area equipped/pot.	%			

Linking Policy & Performance

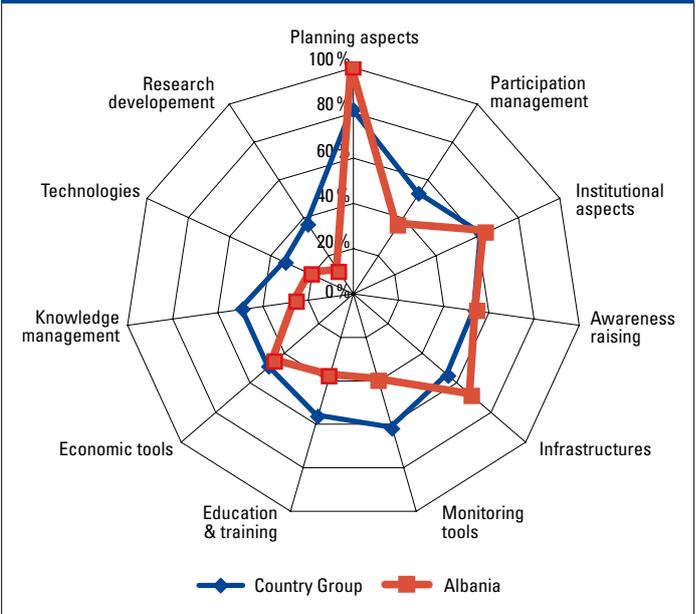
Albania is a country which is striving towards EU accession. In this context, all economic development policies are oriented towards sustainability. The National Strategy for Development and Integration has clear goals to meet EU standards regarding water supply, sanitation and integrated management of the water resources.

Despite the National Strategies and Action Plans, integrated water resource management is far from being in place. The cross border projects in the three shared lakes of Albania are worth mentioning. The main objectives of these projects are not only conservation, but also the joint management of the trans-boundary waters and their catchments. Such projects have established inclusive stakeholder commissions and working groups for the joint management of the lake waters. The prevention of pollution from wastewater, solid waste and industrial and agricultural activities are priority activities.

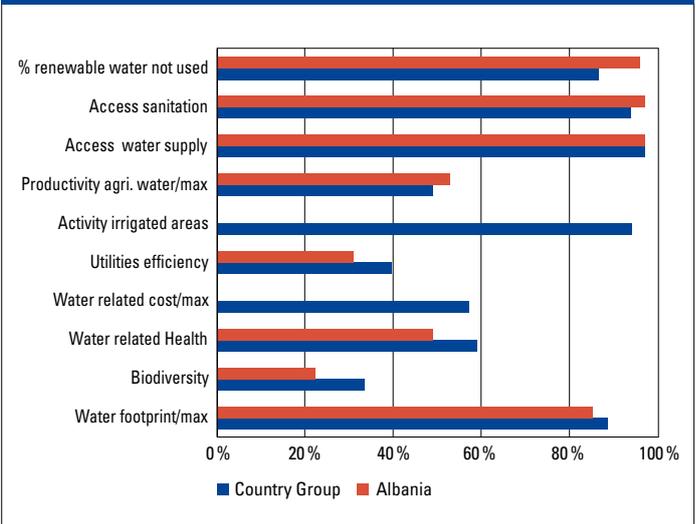
The decentralization process for the WWUs started in 2003 with a management contract for four WWUs which constitute the first economic incentive to encourage the participation of private water services in water provision. In 2008, the WWUs were transferred by law to the Municipalities and Communes. This is a decentralization process designed to make these WWUs more independent and sustainable. However, little has been done to strengthen the WWU's capacities in water supply management, service delivery and quality control. Additionally, stakeholder involvement (particularly of women and youth) is largely missing.

Sanitation is also a priority in the Albanian national strategies. However, the sanitation system in Albania is in poor condition. Monitoring of wastewater quality is almost completely neglected and studies on the impact of effluents on the environment are scarce. Educational programmes linking hygiene with sanitation are scarce due to a lack of funding, especially by the NGOs. Water supply is a priority and most of the funding is allocated to this sector.

CSD-13 Policy Actions Implementation



Sector Outcomes



2. Bangladesh

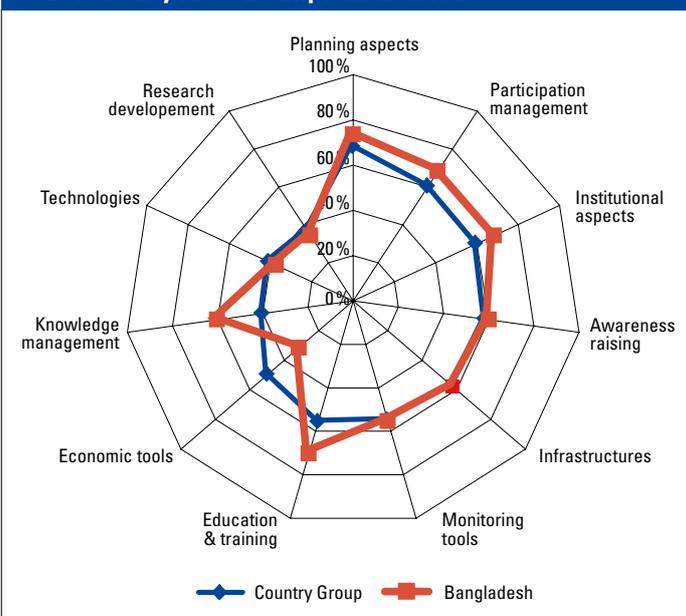
	Profile			Typology	Context (HDI)	/
	Renewable water/y	m ³ /cap	7,897		CSD-13 Policy Index	0.5
	Hydropower capability/y	TWh	2			
	Population	'000	153,300			
	Urban population/total	%	25%		Perf. (WSS Access)	/
	Human development	index	0.547			
	GDP (PPP)	\$/cap	2,053			
	Contribution of agri. to GDP	%	20%			
	Investment climate	index	0.48			
	ODA for water sector/y	\$/cap	0.47			
Storage capacity surface water	km ³	20,296				
Irrigated area equipped/pot.	%	50%				

Linking Policy & Performance

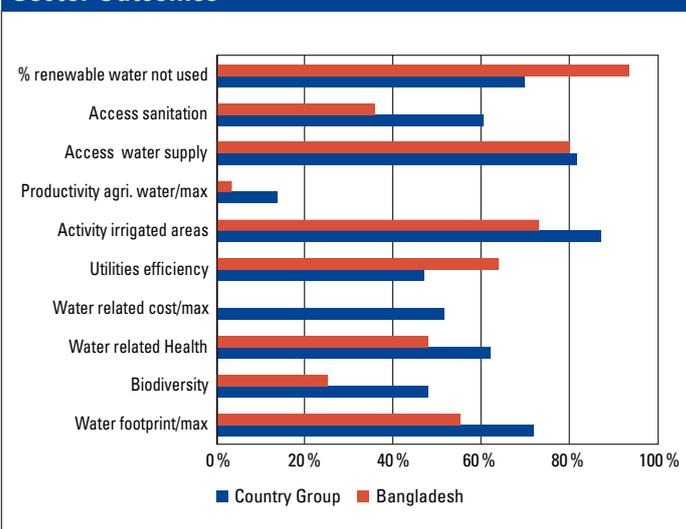
An extensive policy framework exists. The National Water Policy (NWP) is the main guiding instrument covering all water related users/agencies. In water related sectors agriculture has maintained a steady growth over the past two decades. However, practically all other water related sectors have suffered from declining water resources availability, deteriorating quality and, to a large extent, lack of an effective framework to provide sustainable development and management of available water resources. These continue to be affected by loss of perennial wetlands, heavy reliance on ground water for irrigation and WS, encroachment and pollution. The National Water Management Plan (2004) has been approved to make operational the directives given by the NWP, i.e. community participation, especially the empowerment of women, private sector involvement; and effective cost recovery mechanisms for appropriate operation and maintenance. In line with the NWP, National Water Resources planning is separated from the Water Resources sector development and management.

The WSS sector has been characterised by the participation of private and public agencies. The Government of Bangladesh (GoB) has installed more than 1.2 million hand pump tube wells in the rural areas and six times more tube wells have been installed by private individuals, NGOs and other agencies. The challenge of safe drinking water was almost resolved until contamination of ground water by arsenic was discovered. Sanitation programmes have achieved significant coverage in recent years. But, untreated sludge from latrines is generally discharged through open drains and into rivers.

CSD-13 Policy Actions Implementation



Sector Outcomes



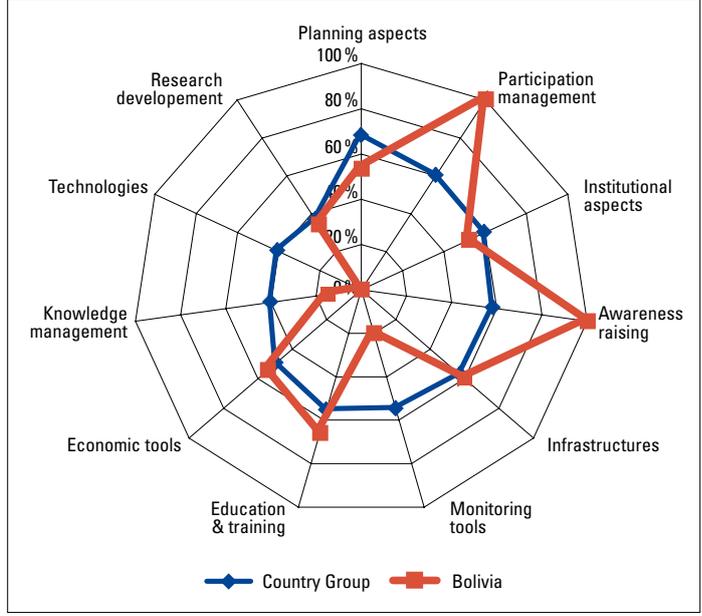
3. Bolivia

	Profile			Typology	Context (HDI)		/
	Renewable water/y	m³/cap	67,666		CSD-13 Policy Index	0.5	
	Hydropower capability/y	TWh	126				
	Population	'000	9,200				
	Urban population/total	%	64 %		Perf. (WSS Access)	/	
	Human development	index	0.695				
	GDP (PPP)	\$/cap	2,819				
	Contribution of agri. to GDP	%	13 %				
	Investment climate	index	0.55				
	ODA for water sector/y	\$/cap	4.17				
	Storage capacity surface water	km³					
Irrigated area equipped/pot.	%	6 %					

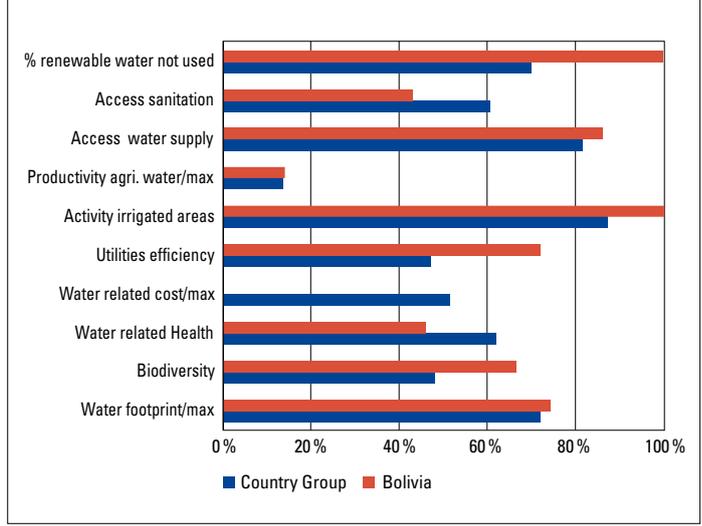
Linking Policy & Performance

IWRM has faced a decade of strong challenges and controversy in order to set a new Water Law. The National Plan for Irrigation could be considered as the best effort to reach an IWRM approach, because it implies strategies for irrigation as well for watershed and basic water and sanitation access. But its sustainability depends on its approval and the allocated budget to accomplish the goals. Financial dependence on international cooperation and minimal public expenditure (a complex period of social unrest and four successive national governments between 2002 and 2006) are central concerns in the perspective for sustainable plans in the water sector. The lag in providing adequate sanitation can be attributed to the lack of economic resources for sewerage services in urban areas. Prioritization of water infrastructure instead of sanitation and the absence of sector policies to enforce both services growing together explain the significant gap between water and sanitation coverage (77 per cent vs. 46 per cent). In the normative field, Law 2066 on water and sewerage services, approved in 2000, governs urban Water Utilities and established concessions, licenses and registers, the three regulatory models. Given the changing regulatory framework, the new license process seems to be more difficult and therefore could influence the rate of expenditure on water and sanitation in Bolivia. Greater strength exists in the social management of water. The Inter-institutional Council of Water CONIAG, promoted in 2002, seems to be better structured for the decision making process on water resource management. Social participation in the design and O&M process also reached an interesting development level. Since 1999 rural projects for water and basic sanitation operate under a Community Development Strategy (DESCOM). DESCOM targets local capacity development in operation and maintenance of water systems, and the training of educators, managers and technicians in different aspects of water management. Most multilateral and bilateral agencies as well as national institutions support the importance of DESCOM for water and sanitation sustainability in rural projects as well as for M&S cities.

CSD-13 Policy Actions Implementation



Sector Outcomes



4. Botswana

Profile	Renewable water/y	m ³ /cap	8,167	Typology	Context (HDI)	/
	Hydropower capability/y	TWh			CSD-13 Policy Index	0.7
	Population	'000	1,800		Perf. (WSS Access)	/
	Urban population/total	%	57 %			
	Human development	index	0.654			
	GDP (PPP)	\$/cap	12,387			
	Contribution of agri. to GDP	%	2 %			
	Investment climate	index	0.68			
	ODA for water sector/y	\$/cap	4.19			
	Storage capacity surface water	km ³	0.38			
Irrigated area equipped/pot.	%	11 %				

Linking Policy & Performance

Botswana is a semi arid country with limited renewable water resources which depend mainly on erratic rainfall. The majority of the population (70 per cent), especially those in rural areas, depend on groundwater sources some of which are fossil i.e. not recharged/renewable. Faced with these conditions the country has long placed a high priority in its national development plans and on the assessment, development and management of water resources. Measures have also been put in place to protect these resources from pollution.

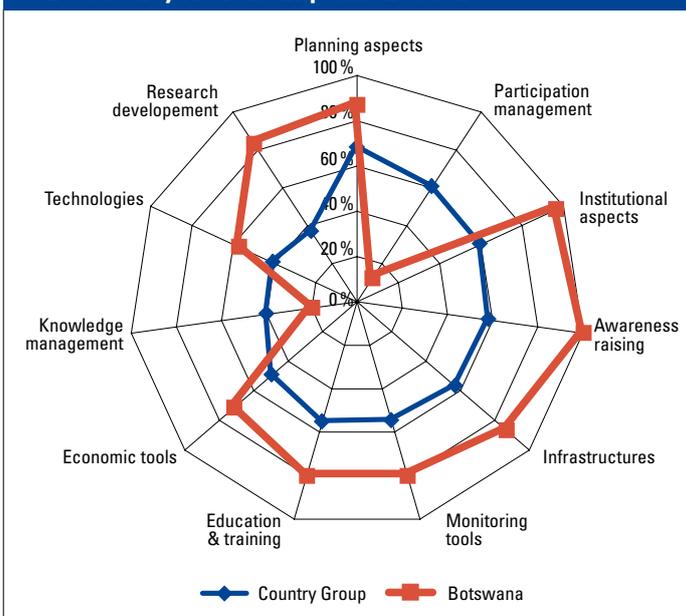
The survey shows that Botswana has gone a long way towards putting in place a legislative and institutional framework for the management of water resources and the implementation of sanitation systems. The country has done well in providing access to water and sanitation while the IWRM still lags behind. The IWRM programme was not started as a policy in Botswana, although in practice the concept is already used in planning, especially for project implementation. The country is working on a Water Policy which will give IWRM significant weight.

The Botswana Government's approach to water supply to the people is to ensure that services will be available to all settlements with a population of 200 or more, and this has enabled the country to service more people. The Central Statistics Office (CSO) estimates that 95 per cent of the people have safe drinking water available. This figure represents an average of the 99.4 per cent coverage in urban areas and the 91.4 per cent coverage in rural areas.

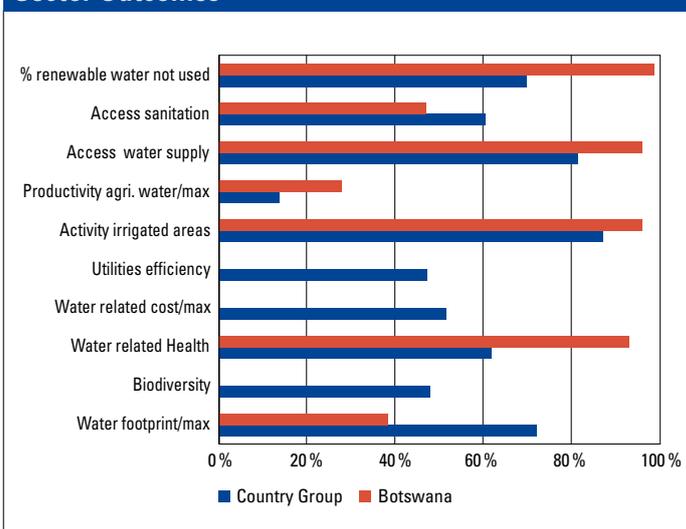
Botswana's approach to sanitation has been to address two major issues, protecting the scarce water resources from pollution, and improving people's health and hygiene by providing acceptable sanitation measures. The country has adopted an approach to sanitation which considers both water borne and pit latrine (on-site) systems as acceptable. This is slightly different from the internationally accepted definition.

Based on this international definition Botswana's sanitation coverage, as given by the CSO and based on access to safe sanitation facilities, is estimated at 78 per cent. This is the average of the 59 per cent rural coverage and the 97 per cent urban coverage. This average figure exceeds the JMP figure.

CSD-13 Policy Actions Implementation



Sector Outcomes



5. Bulgaria



Profile			Typology	
Renewable water/y	m ³ /cap	2,519	Context (HDI)	+
Hydropower capability/y	TWh	15	CSD-13 Policy Index	0.4
Population	'000	7,700		
Urban population/total	%	70%	Perf. (WSS Access)	+
Human development	index	0.824		
GDP (PPP)	\$/cap	9,032		
Contribution of agri. to GDP	%	9%		
Investment climate	index	0.62		
ODA for water sector/y	\$/cap			
Storage capacity surface water	km ³			
Irrigated area equipped/pot.	%			

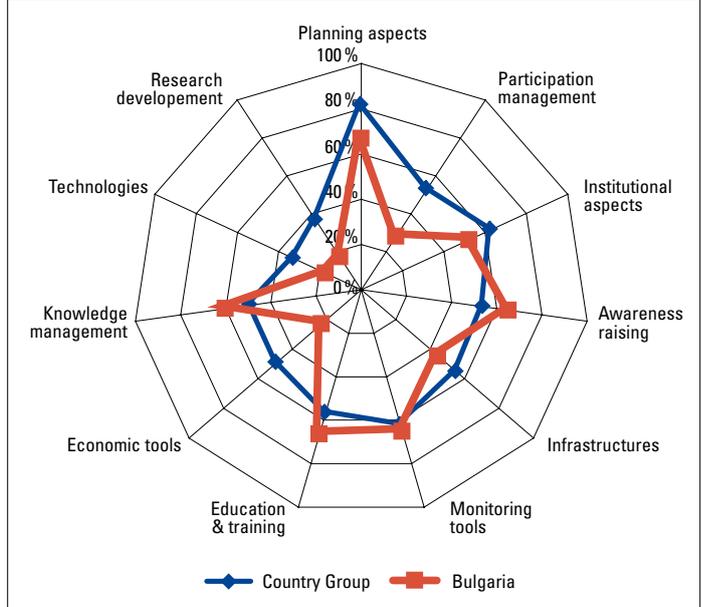
Linking Policy & Performance

As an EU-member state from 1 January 2007 Bulgaria has harmonised its legislation with that of the EU. There are relevant strategies for environmental protection and for water supply and sewerage, as well as national programmes for the water sector development. Most of the planned infrastructure projects have not been implemented. The lack of high quality projects is the reason for not absorbing and spending the money for WWTPs from ISPA (the EU pre-accession fund). The effective implementation of Operational Programme Environment 2007-2013 and Rural Regional Development Programme 2007-2013 is facing problems.

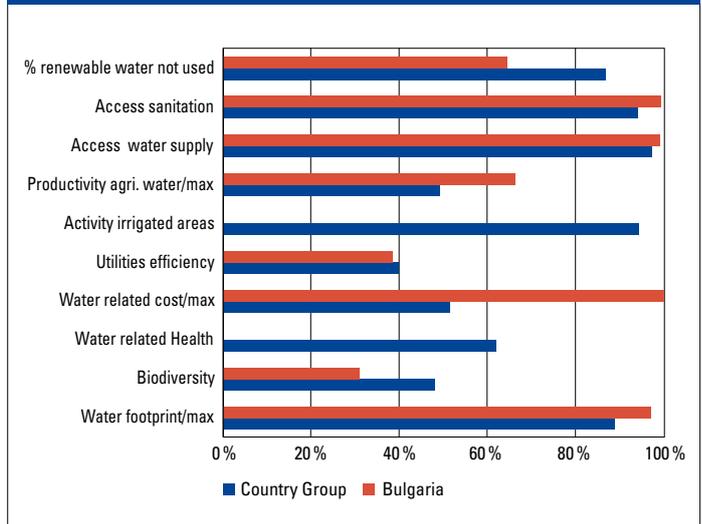
Even if these investment programmes for improving the water supply and sewerage sector are completed, covering the necessary operation and maintenance costs and depreciation in the future will be challenging. Implementing expensive technologies for water treatment will inevitably lead to raising O&M and depreciation costs, and hence, the price of water will increase. Implementing full cost recovery and a lack of subsidies for the poor may lead to conflicts, and perhaps a shutting down of some expensive facilities because of the lack of money for O&M costs. The 'polluter pays' principle does not directly reduce the price of water because revenues are earmarked for investment projects only. At present, there is low emphasis on the implementation of efficient and low-cost technologies and water saving solutions, as well as ecologically-friendly technologies (wetlands, eco-sanitation, etc.)

The Water Act stipulates an IWRM at river basin level, but it is not implemented in practice. There is no IWRM strategy. The river basin management plans have to be prepared by 2009. Not all stakeholders are included in the process of plan development (especially not women and youth), leading to poor decisions. There is some bias towards selecting expensive methods and technologies.

CSD-13 Policy Actions Implementation



Sector Outcomes



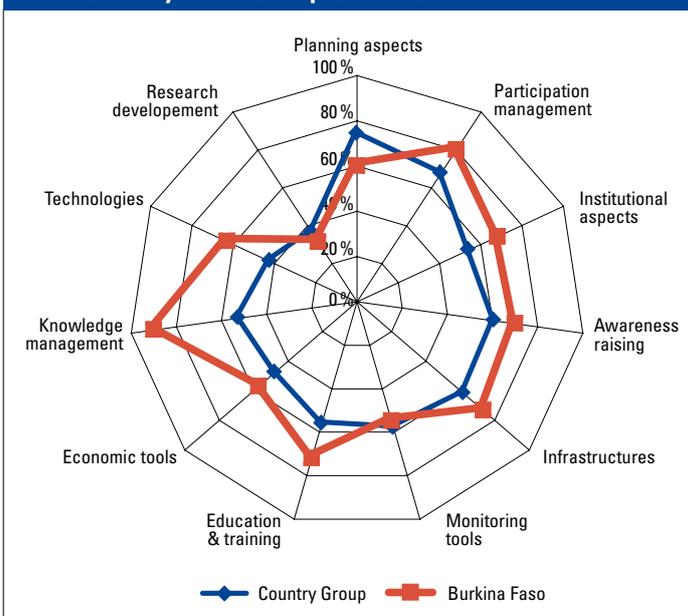
6. Burkina Faso

	Profile			Typology	Context (HDI)	–
	Renewable water/y	m ³ /cap	1,259		CSD-13 Policy Index	0.6
	Hydropower capability/y	TWh	1			
	Population	'000	13,900			
	Urban population/total	%	18%		Perf. (WSS Access)	–
	Human development	index	0.37			
	GDP (PPP)	\$/cap	1,213			
	Contribution of agri. to GDP	%	33%			
	Investment climate	index	0.55			
	ODA for water sector/y	\$/cap	3.42			
Storage capacity surface water	km ³	5.1				
Irrigated area equipped/pot.	%	15%				

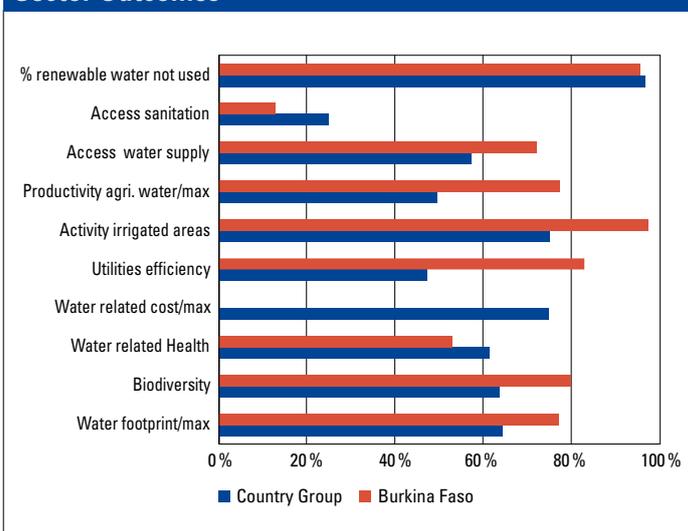
Linking Policy & Performance

The National Programme – Water Supply and Sanitation is a unique and well defined framework for the technical and financial intervention of partners. It involves all water and sanitation agencies. The average number of WSS infrastructures established per year is about 1500 (for all types: boreholes, modern wells, etc.). If the funding required for each year is sustainable and assured by technical and financial partners, including the State, NGOs and local collectives, it is reasonable to assume that the 2015 objective for WSS can be achieved. For sanitation, these objectives will not be achieved; there will be a significant shortfall. The reasons for this situation are, among others (i) the lack of awareness of the population about sanitation issues, (ii) the huge demand, (iii) the low level of organization in general in relation to sanitation objectives and (iv) the significant financial resources that need to be mobilised. For 5 years, the country has conducted a complex exercise on IWRM, including all water domain agencies, The exercise sought to identify the main problems and major options that should guide sustainable water resources management. This exercise was conducted within the framework of a key legislative text, the “orientation law related to water management”. It resulted in the development of a consensual document of reference (the national IWRM plan) which determines (from 2004) the actions to be implemented over a span of 13 years, in order to make IWRM operational in the country. Different results are already in place at the legislative or institutional level (national water council, water technical committees, local water committees, water agency). It will, nevertheless, take some time before the four planned water basin agencies are fully functional with an efficient water police. Important drivers for progress will be (i) increased water related problems (lack of water, inundation, pollution) and (ii) continuous political will and application of the law related to “financial contribution for water”.

CSD-13 Policy Actions Implementation



Sector Outcomes



7. Cape Verde

	Profile			Typology	Renewable water/y	m ³ /cap	600	Context (HDI)	/
	Hydropower capability/y	TWh			CSD-13 Policy Index	0.6			
	Population	'000	500						
	Urban population/total	%	57 %		Perf. (WSS Access)	/			
	Human development	index	0.736						
	GDP (PPP)	\$/cap	5,803						
	Contribution of agri. to GDP	%	12 %						
	Investment climate	index	0.58						
	ODA for water sector/y	\$/cap	11.4						
	Storage capacity surface water	km ³	0						
Irrigated area equipped/pot.	%	89 %							

Linking Policy & Performance

The existing potable water supply system is very diverse, including distributions networks, distribution by tankers, fountains, cisterns, wells, water sources and open channels, among others. The situation in the urban areas is better than in the rural areas, given that wide urban coverage is ensured through supply by fountains and distribution networks.

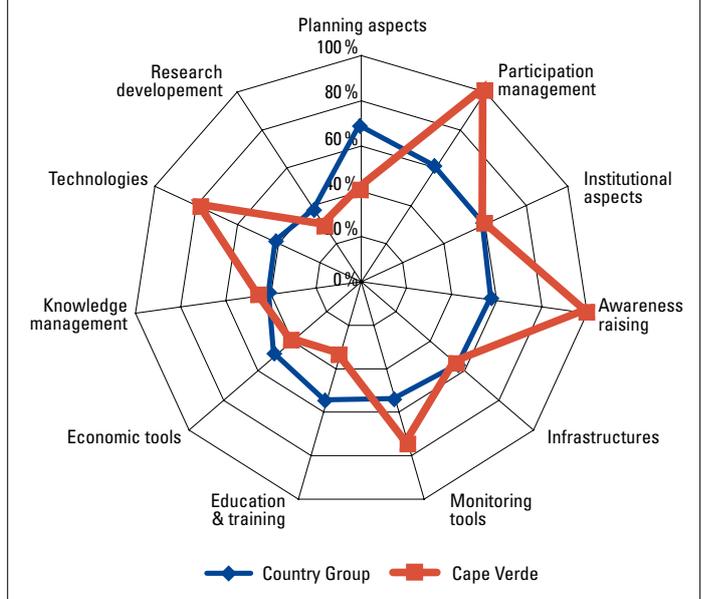
In the rural areas sewerage and waste water networks do not exist and more than 90 per cent of the population does not have access to safe sanitation.

While 85 per cent of the population has access to safe drinking water, several problems remain to be addressed. The country has been confronted with continuous droughts with the dramatic consequence that the water resources available are not keeping pace with the population increase. The Government has made important investments in this sector and a drift towards desalination can be observed. This solution, being a very expensive one for a relatively poor country like Cape Verde, implies more and more support from international cooperation. In the meantime, investments and efforts should be directed towards harvesting surface rainwater (to be used directly or to recharge the aquifers).

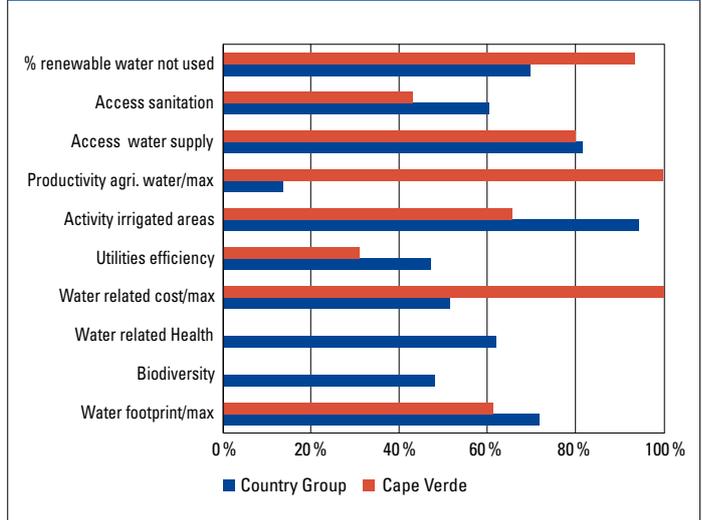
While IPCC scenarios project for the country a mean annual temperature increase of 0.7 to 2.5°C by the 2060s, and 1.2 to 3.7°C by the 2090s, current models are not consistent in projecting either increases or decreases in rainfall. Sea-level is expected to rise by 0.13 and 0.56 m by the 2090s.

Sanitation has always been a great concern for the successive governments since independence. Sewerage networks infrastructure is lacking on almost all the islands and in the urban and rural areas. The use of septic tanks is marginal (5.2 percent). The country needs investments for project implementation starting with environmental education and moving through to waste water collection and treatment. Education programmes in the rural areas are an urgent priority

CSD-13 Policy Actions Implementation



Sector Outcomes



8. Chad

Profile	Renewable water/y	m ³ /cap	4,257	Typology	Context (HDI)	—
	Hydropower capability/y	TWh			CSD-13 Policy Index	0.4
	Population	'000	10,100		Perf. (WSS Access)	—
	Urban population/total	%	25 %			
	Human development	index	0.388			
	GDP (PPP)	\$/cap	1,427			
	Contribution of agri. to GDP	%	33 %			
	Investment climate	index	0.46			
	ODA for water sector/y	\$/cap	1.72			
	Storage capacity surface water	km ³				
Irrigated area equipped/pot.	%	9 %				

Linking Policy & Performance

Chad water resources are fairly important (2 per cent of renewable water is used), but Chad remains a country where access to a water supply is low. Access to basic sanitation is extremely low (9 percent) and water collection, treatment and reuse remains a very marginal activity, leading to serious health problems (diarrhoeas and cholera remain endemic in Chad) and negative environmental impacts. The IPCC scenarios project an increase of the mean annual temperature in Chad of 1.0 to 3.4 °C by the 2060s, and 1.6 to 5.4 °C by the 2090s. Measurements of the mean annual rainfall have not indicated any discernible changes since the 1960s and the means of the precipitation change rate scenarios until the 2090s are projected to be close to zero.

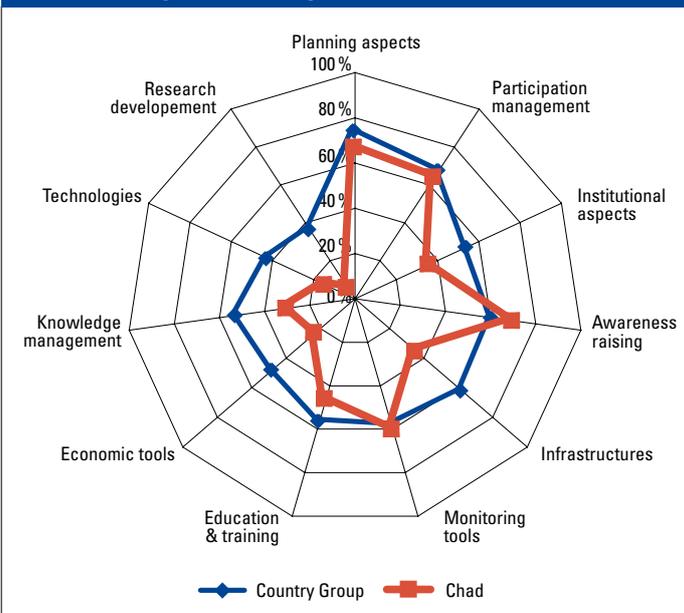
The transfer of technology for the low cost provision and treatment of drinking water is not given priority. There are some pilot initiatives to promote hygiene and sanitation, but these have yet to be scaled up.

Technical and financial backing has been provided for the development of a “nationally owned IWRM approach” (development of the SDEA in 2003). But considering the delay occurring in the decentralization process and other governance reforms, performance in this domain can also be considered as weak. A nationally owned IWRM does not yet exist and there is no river basin management strategy in the country.

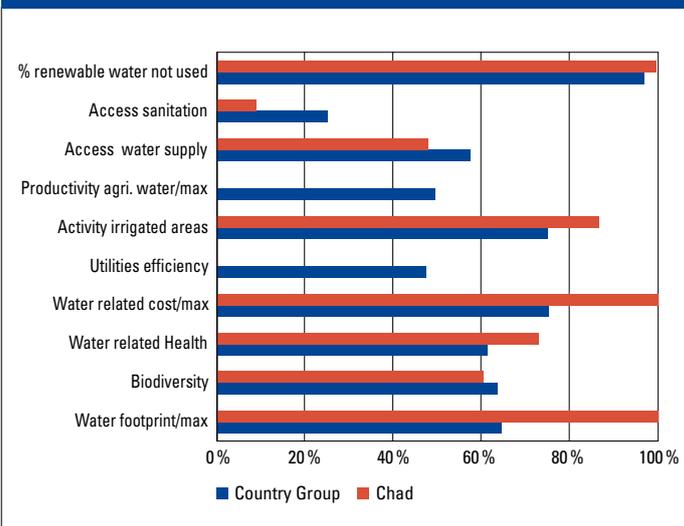
The network and the systems of information put in place for monitoring the quality and the quantity of surface and ground water resources are far from being effective and have been deteriorating since the year 2000.

The management of the water demand from sectors, agriculture in particular, is weak, as shown by the poor level of development of irrigation.

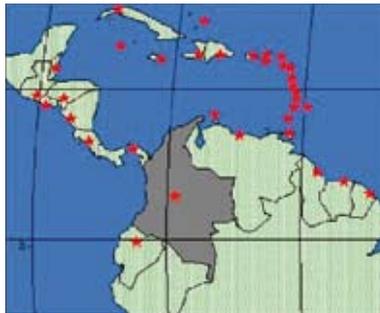
CSD-13 Policy Actions Implementation



Sector Outcomes



9. Colombia



Profile			Typology	
Renewable water/y	m ³ /cap	47,483	Context (HDI)	/
Hydropower capability/y	TWh	200	CSD-13 Policy Index	0.6
Population	'000	44,900		
Urban population/total	%	73%	Perf. (WSS Access)	+
Human development	index	0.791		
GDP (PPP)	\$/cap	7,304		
Contribution of agri. to GDP	%	12%		
Investment climate	index	0.61		
ODA for water sector/y	\$/cap	0.14		
Storage capacity surface water	km ³	12.5		
Irrigated area equipped/pot.	%	14%		

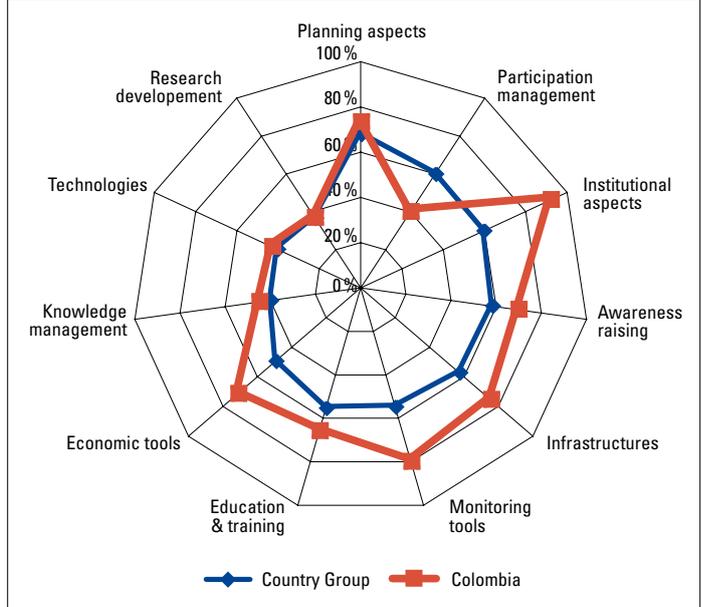
Linking Policy & Performance

The institutional framework for water management is based on role separation in the National Government which is responsible for water sector policy, regulation and control. Regional Autonomous Corporations (CAR) manage natural resources administration and the municipalities are responsible for the efficient provision of public services. The planning system for Integrated Watershed Management has gone through different phases of development. One in the 1970s and 1980s when strategic ecosystems for water supply were protected by law, and another when Watershed Management Plans were strengthened by Dec 1729/2002.

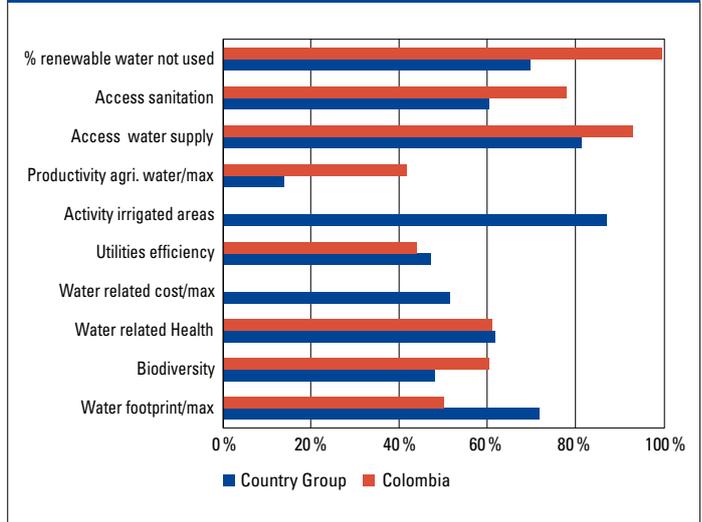
The Government of Colombia established a legal framework that clearly separates service provision from policy making, thus allowing private sector participation. Regulation and control are allocated to different entities in the Colombian Government. The scheme of “multi-regulators” and competencies at different territorial levels under a decentralised structure for service provision requires a high degree of inter-institutional coordination, clear policies and role definition. This coordination needs further strengthening.

During the last few years drinking water and basic sanitation coverage and quality improved significantly in the big urban centres. In spite of this, there are huge challenges to overcome, particularly in the intermediate sized cities and the rural areas. Poor treatment of waste water is a serious issue that needs more attention. One of the major achievements is the Water and Sanitation Policy subsidy system which works well. However, the sector has been short of information for policy design, regulation and control. Colombia has at least eight different stakeholder participation mechanisms on environmental issues defined by law (three of them in the national constitution), but common citizens do not make use of them to the extent possible. As a result, participation in some scenarios, like planning and monitoring, can be low. The CONPES documents explicitly mentions gender equity and gender perspectives, but concrete advances in identifying the needs and different conditions of women and youth are very few.

CSD-13 Policy Actions Implementation



Sector Outcomes



10. Congo

Profile	Renewable water/y	m ³ /cap	231,111	Typology	Context (HDI)	/
	Hydropower capability/y	TWh	10		CSD-13 Policy Index	0.2
	Population	'000	3,600		Perf. (WSS Access)	-
	Urban population/total	%	60%			
	Human development	index	0.548			
	GDP (PPP)	\$/cap	1,262			
	Contribution of agri. to GDP	%	55%			
	Investment climate	index				
	ODA for water sector/y	\$/cap	0.14			
	Storage capacity surface water	km ³				
Irrigated area equipped/pot.	%	1%				

Linking Policy & Performance

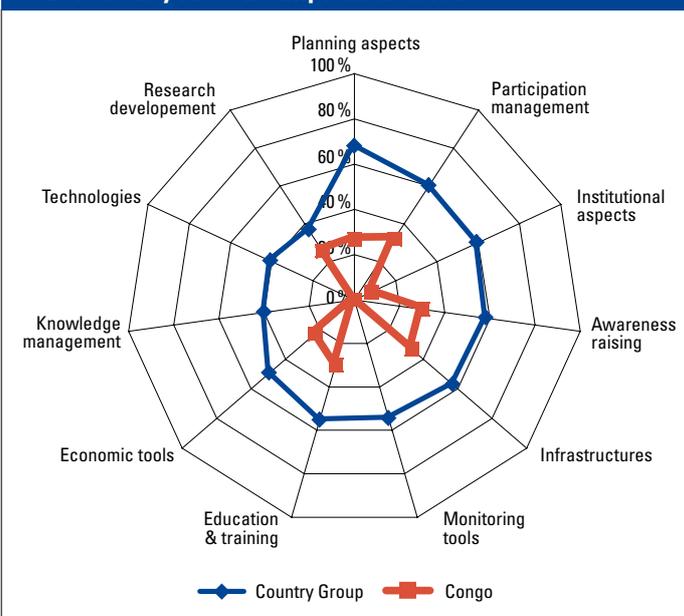
The Republic of Congo has many water resources; however the level of drinking water supply and basic sanitation coverage is very low.

The armed conflicts of the years 1993 to 1999 destroyed the main economic infrastructure, in general, and the water supply and basic sanitation schemes in both the urban and rural areas, in particular. Between 1997 and 1999 all shareholders and ODA suspended their financial interventions for the water sector with the consequence that many projects could not be implemented. Since 1999, the social climate in the country has returned to normal.

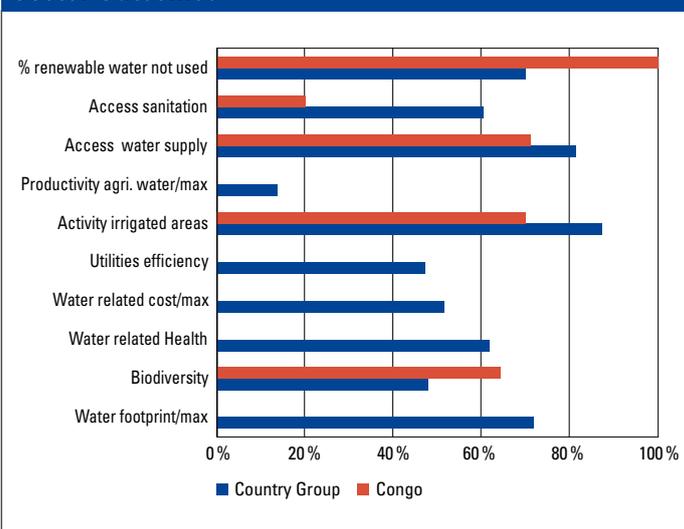
The drinking water supply and sanitation sectors are managed by the Ministry of Energy and Hydraulics. This ministry is responsible for formulating water policy, but other ministries have responsibilities in the water sector as well and coordination is not ensured.

In adopting a new water law (2003), some new organizations were created, but they are not operational mostly because of a lack of financing and the low implementation capacity of the government. In 2006, the Ministry of Energy and Hydraulics undertook a review of water policy and the strategies for water and energy. In 2007, the Poverty Reduction Strategies Document (PRSD) classified the water sector among the national priorities. This reference document introduced the new concept of involving all stakeholders, particularly women and youth, in the planning, managing and, where appropriate, decision making for water services. The main objective of the PRSD in the water sector is to improve access to drinking water and basic sanitation by (i) rehabilitation and building of drinking water supplies and sanitation infrastructures in rural and urban areas, (ii) rehabilitation and building of water quality control laboratories, (iii) promotion of information sharing, education and communication, (iv) capacity building and (v) promotion of new technologies.

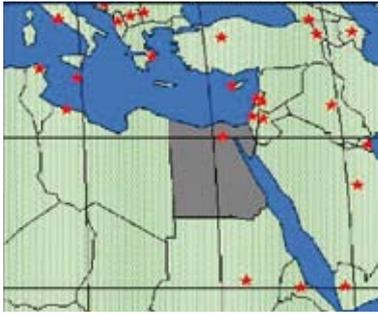
CSD-13 Policy Actions Implementation



Sector Outcomes



11. Egypt



Profile			Typology	
Renewable water/y	m ³ /cap	1,192	Context (HDI)	/
Hydropower capability/y	TWh	50	CSD-13 Policy Index	0.6
Population	'000	72,800		
Urban population/total	%	43%	Perf. (WSS Access)	+
Human development	index	0.708		
GDP (PPP)	\$/cap	4,337		
Contribution of agri. to GDP	%	15%		
Investment climate	index	0.53		
ODA for water sector/y	\$/cap	2.49		
Storage capacity surface water	km ³	169		
Irrigated area equipped/pot.	%	77%		

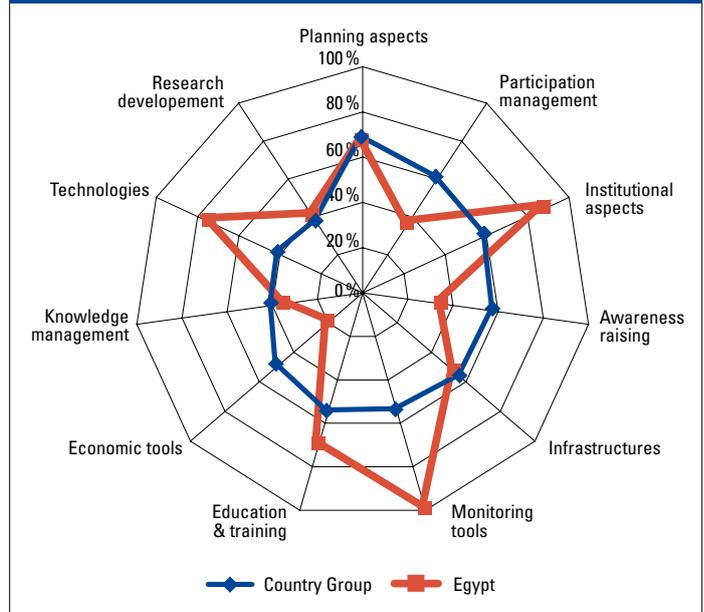
Linking Policy & Performance

Egypt ranks among the best lower middle-income countries in the world in providing urban and rural communities with improved drinking water supplies. Steps toward water utility reform and commercialization were accelerated by establishing the national Holding Company for Water and Wastewater (HCWW) in 2004. The affiliated companies undertook several steps to be more customer and planning oriented and placed more emphasis on education and training. The main challenge facing the HCWW is to cover the cost of operations and maintenance while maintaining one of the lowest tariffs in the world. A second key reform was the establishment of the water regulator EWRA in 2004. This organization is taking the lead in policy and legal reform of the water and wastewater sectors.

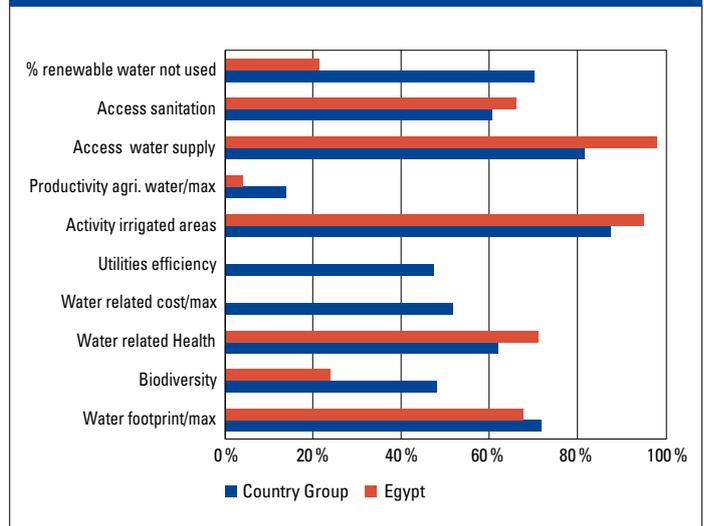
Several constraints still exist within the water and wastewater sectors in Egypt. These include (i) poor quality of completed infrastructure works, (ii) lack of proper documentation, (iii) deteriorating quality of raw water sources, (iv) limited incentives for enhanced and optimised metering, billing and collection strategies, (v) limited incentives to actively market water supply and wastewater services to as yet un-served areas/user groups, (vi) inadequate budgets for preventive and corrective operation, maintenance and repair measures, (vii) lack of sufficient skilled and experienced staff and a distorted staffing age structure and (viii) persistent shortages of spares, materials, equipment and supportive IT logistics. Egypt faces increasing problems in public health and water quality deterioration which stem from inadequate rural sanitation. In addition, high water tables are rendering many on-site sanitation facilities unviable. The challenge for Egypt's rural sanitation has evolved from collection to safe disposal, and the scale of the problem has shifted from the household- to the river basin-level.

IWRM is the direction taken by the Egyptian Ministry of Water Resources and Irrigation (MWRI). MWRI licenses surface and ground-water abstractions and sets standards for municipal waste-water discharge to drains. MWRI is promoting the development of participatory water user associations at branch canal and district levels to plan water deliveries, resolve disputes among water users, and maintain irrigation and drainage systems.

CSD-13 Policy Actions Implementation



Sector Outcomes



12. Ethiopia

Profile	Renewable water/y	m ³ /cap	1,392	Typology	Context (HDI)	–
	Hydropower capability/y	TWh	260		CSD-13 Policy Index	0.4
	Population	'000	79,000		Perf. (WSS Access)	–
	Urban population/total	%	16%			
	Human development	index	0.406			
	GDP (PPP)	\$/cap	1,055			
	Contribution of agri. to GDP	%	49%			
	Investment climate	index	0.54			
	ODA for water sector/y	\$/cap	0.42			
	Storage capacity surface water	km ³	3,458			
Irrigated area equipped/pot.	%	0%				

Linking Policy & Performance

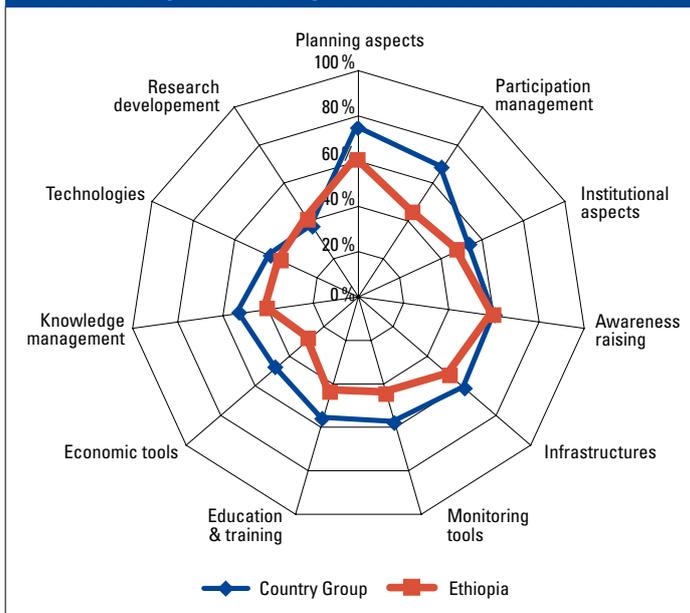
The management and development of the water resource is decentralised and participatory. There are different public and international institutions involved in the management, capacity building, and research and development of the national water resources of the country. The Ministry of Water Resources of the Federal Government is the lead institution in terms of preparing policy, regulations and development programmes for the water sector. The role of other agencies, like the Ministry of Agriculture and Rural Development and Health and Education, is crucial. Participation of the private sector is, however, limited to services, such as consultancies, contracting and supplying.

The policy of the country towards water resources management and development is comprehensive. Its integration with other development policies of the country is good. Water supply, sanitation, irrigation development and watershed management are part of the national development programme. The development of the sector, in terms policy setting, capacity building, resource allocation, provision of infrastructure and inclusion with the national pro-poor sectors, is progressing. The current trend towards preparing integrated river basin master plans, increasing the water supply, improving sanitation and the size of irrigation and hydropower development within an IWRM approach is positive.

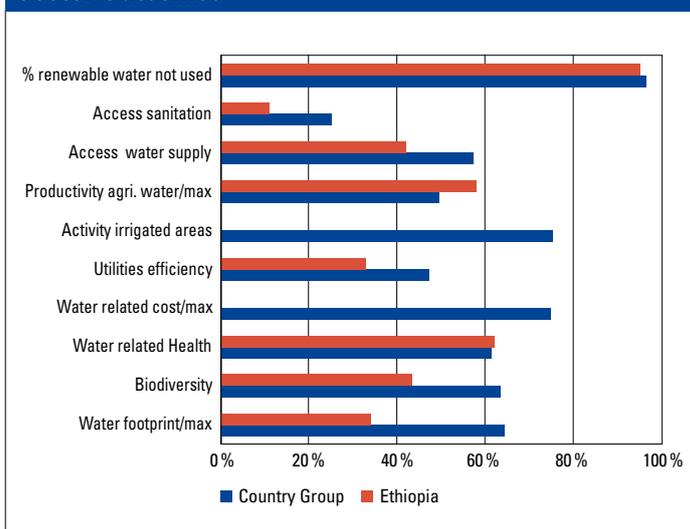
The IPCC scenario foresee an increase of the mean annual temperature for Ethiopia of 1.1 to 3.1 °C by the 2060s and 1.5 to 5.1 °C by the 2090s. The models are broadly consistent showing an increase in the countrywide annual rainfall, largely as a result of increasing precipitation by 10 to 70 % in the rainfall season (Oct-Dec).

The main issues associated with the weak water and sanitation coverage are problems related to resources and capacity in terms of skilled labour. The main factors that affect sustainability are coordination between different stakeholders, lack of resources and high expectations of returns from quick interventions. The knowledge gap, issue of land ownership and high staff turnover at different levels are all root causes for the low level of sustainability.

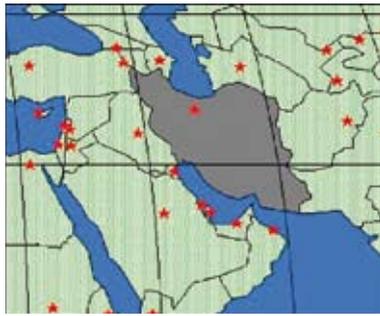
CSD-13 Policy Actions Implementation



Sector Outcomes



13. Iran

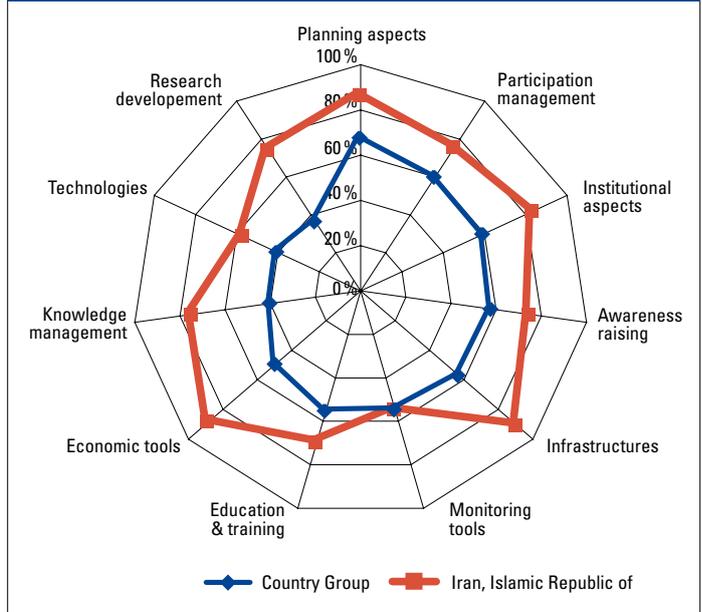


Profile			Typology	
Renewable water/y	m ³ /cap	1,981	Context (HDI)	/
Hydropower capability/y	TWh	70	CSD-13 Policy Index	0.8
Population	'000	69,400		
Urban population/total	%	67 %	Perf. (WSS Access)	+
Human development	index	0.759		
GDP (PPP)	\$/cap	7,968		
Contribution of agri. to GDP	%	11 %		
Investment climate	index	0.43		
ODA for water sector/y	\$/cap	0		
Storage capacity surface water	km ³	39.2		
Irrigated area equipped/pot.	%	48 %		

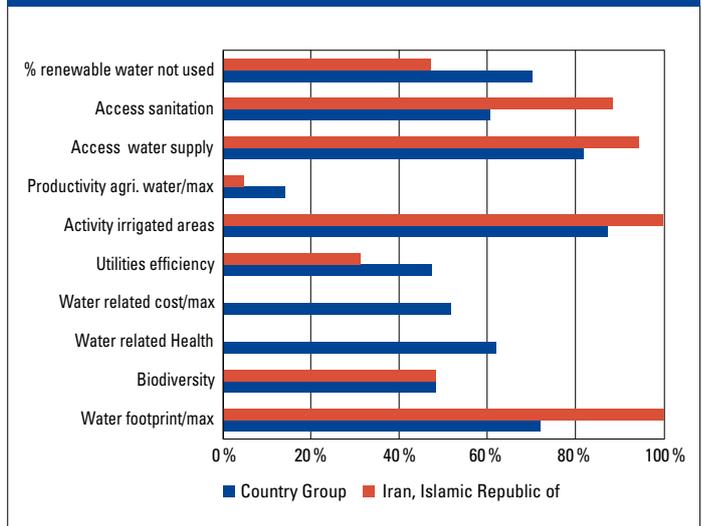
Linking Policy & Performance

One of the most important trends in Iran's water management concerns establishing and implementing water allocation discipline for all watersheds. Projects in watersheds are not assessed in isolation any more, but with an integrated view and with the participation of all stakeholders. In recent years the designs of many dams have thus been changed based on information coming from previous investments (projects under operation) or a serious assessment of the present situation in the watersheds (water needs, equitable sharing of benefits among stakeholders in watershed, water quality issues). The Ministry of Energy has developed a comprehensive allocation system. Yet, the cooperation between different sectors (water users) and coordination between stakeholders is only now starting and needs improvements. In this regard, new master plans have been initiated within an IWRM framework for the six main watersheds in Iran. It can, therefore, be expected that progress will follow on this front in the coming years if the capacity of staff is built satisfactorily along the way. In the areas of data collection and databases, water quality monitoring is still weak in the watersheds. Very good trends can be observed in the participation of women and youth in the water and waste water sectors. The participation of women is promoted and there is an increased presence of women in all related organizations. Public participation has also improved in recent years. Many groups have been trained, raising awareness and fostering public participation in different sectors related to water use, such as health, sanitation and hygiene. The provision of drinking water is very high in both urban and rural areas and the quality of drinking water is monitored through a good network of laboratories. There is governmental support for poor people (7 m³ per month per family free of charge). More efforts need to be devoted to increasing the efficiency of the networks. In all water development projects involving domestic and industrial use of water bodies, environmental flows are officially established and regulated.

CSD-13 Policy Actions Implementation



Sector Outcomes



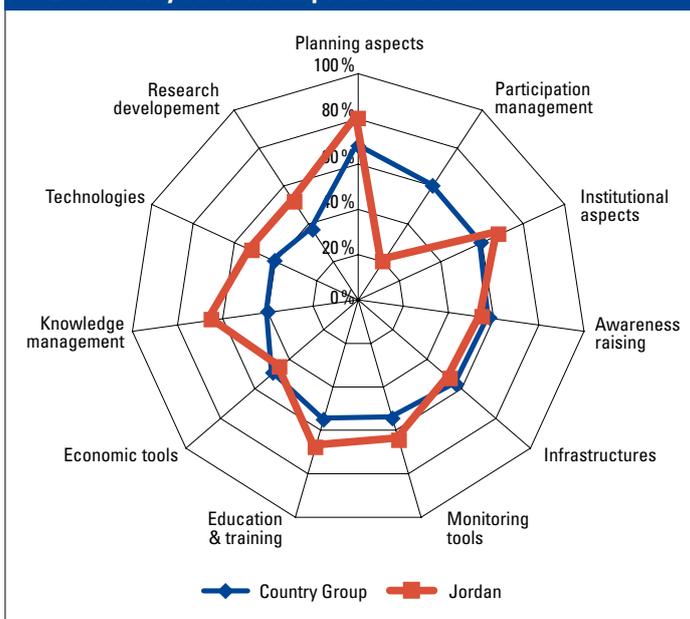
14. Jordan

	Profile			Typology	Context (HDI)		/
	Renewable water/y	m ³ /cap	160		CSD-13 Policy Index	0.6	
	Hydropower capability/y	TWh	2			+	
	Population	'000	5,500				
	Urban population/total	%	82%				
	Human development	index	0.773				
	GDP (PPP)	\$/cap	5,530				
	Contribution of agri. to GDP	%	4%				
	Investment climate	index	0.64				
	ODA for water sector/y	\$/cap	12.42				
Storage capacity surface water	km ³	0.143					
Irrigated area equipped/pot.	%	86%					

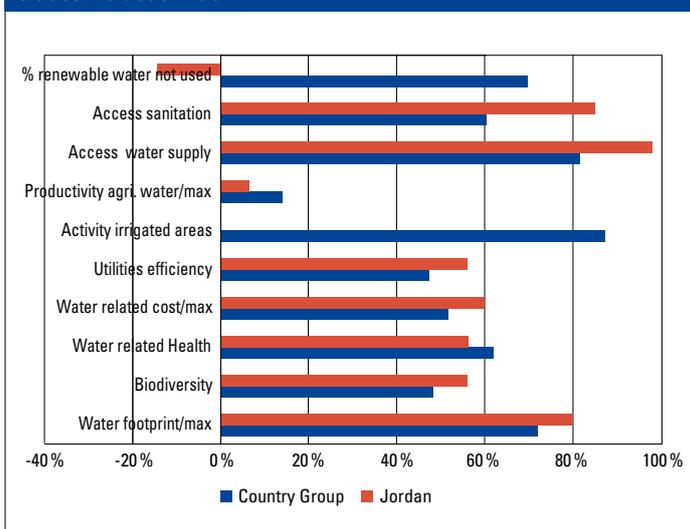
Linking Policy & Performance

There are several organizations dealing with the water sector, such as the Water Authority of Jordan, Jordan Valley Authority and the Ministry of Water and Irrigation. Each has its own strategies, responsibilities and action plans (JVA law, WAJ law and MWI by-law). As long as responsibilities are assigned to all three administrative entities without a clear, legally defined, lead organization for planning and project implementation for the water sector, the risk of outcomes which are not in line with the national water strategy remains. The result can be deficiencies in sanitation, water supply and water resources management. Current laws do not consider public involvement in water sector policy formulation, and decision making processes. The process of restructuring the water sector and drafting a comprehensive water framework law has been started. The actual water tariff scheme for water supplies and sanitation is not covering its costs. The tariff depends on consumption and not on the income of the consumers – therefore government subsidies are across the board and not focused specifically on the poor. Public awareness is mainly focused on saving water and rationing. The public lacks awareness of sanitation issues and hygiene education is limited. The first steps in private sector participation have been taken by privatising the water supplies of Amman and Aqaba together with their maintenance and the sanitation services. The Northern Governorates Water Administration is also in the preparatory stages of being privatised. The experiences in Amman and Aqaba show improvements in the water supply and sanitation services.

CSD-13 Policy Actions Implementation



Sector Outcomes



15. Kyrgyzstan

	Profile			Typology	Context (HDI)		/
	Renewable water/y	m ³ /cap	8,942		CSD-13 Policy Index	0.4	
	Hydropower capability/y	TWh	99				
	Population	'000	5,200				
	Urban population/total	%	36%				
	Human development	index	0.696				
	GDP (PPP)	\$/cap	1,927				
	Contribution of agri. to GDP	%	35%				
	Investment climate	index	0.60				
	ODA for water sector/y	\$/cap	0.55				
	Storage capacity surface water	km ³	21.5				
Irrigated area equipped/pot.	%	48%	Perf. (WSS Access)	+			

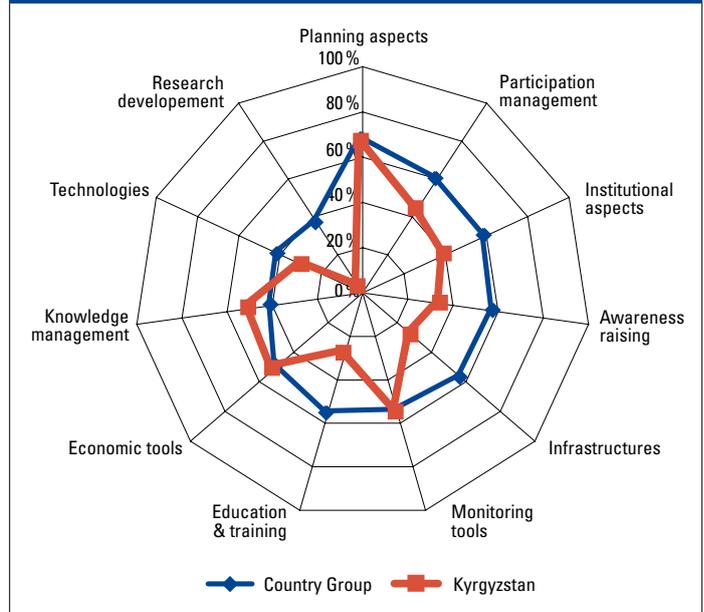
Linking Policy & Performance

The National Council on Water was established in 2006, and is governed by the PM of the Kyrgyz Republic. The Ministry of Agriculture, Water Resources and Processing Industry plays the leading role in the water management institutional setup of the Kyrgyz Republic. The Department of Water Resources implements operation and maintenance of irrigation systems, provides water delivery to water users and, simultaneously, is the leading state water resources management organization. It establishes the limits of water withdrawals from surface and underground water sources for all sectors of the economy, including irrigated farming, industry, drinking water supply, hydropower, fishery and others. The Department of Water Resources is also responsible for interstate relations with neighbouring countries in Central Asia (through the International Fund for Saving the Aral Sea and the Interstate Commission for Water Co-ordination), and implementing the national water policy.

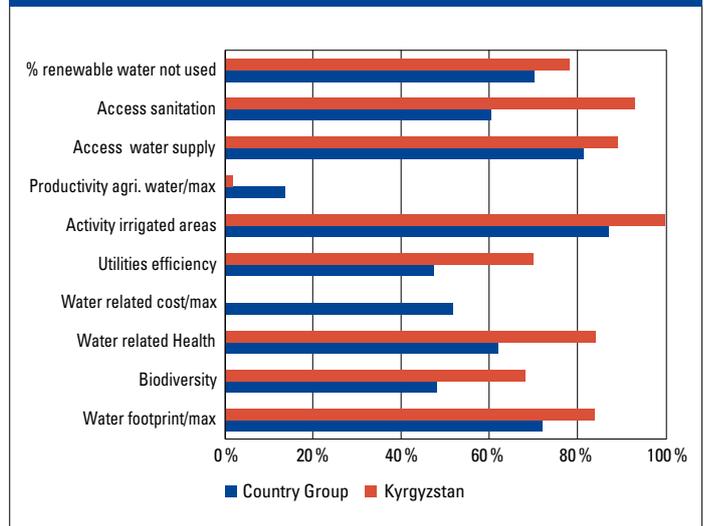
The “Kyrgyzjilkommunsouz” of the Department of Rural Water Supply and the State Enterprise “Bishkekgorvodokanal” are responsible for drinking water supply to the population and sewage disposal. There is no strategy for sanitation in the Kyrgyz Republic. The package of measures “Development of Rural Water Supply in the Kyrgyz Republic up to 2010” mentions increasing access to safe drinking water for up to 80 per cent of the population, but nothing about sanitation. The only related phrase reads, “to increase life standards...”. There is a lack of research institutions for the WSS sector. The private sector does not play an active role in the water sector. A positive issue is wide public (stakeholder) participation in water governance at all hierarchical levels – in the form of Unions of water users and a National Water Council at the country level.

Water provision for agricultural production and drinking water supply are the most important concerns for the Kyrgyz Republic. Achieving poverty reduction in Kyrgyzstan will depend primarily on alleviating the poverty of the rural population. Poor water infrastructure and lack of proper equipment are the principal barriers for economic growth. The financial debt of the WUAs to water management organizations is another limiting factor for irrigation development.

CSD-13 Policy Actions Implementation



Sector Outcomes



16. Lao

Profile	Renewable water/y	m ³ /cap	58,526	Typology	Context (HDI)	/
	Hydropower capability/y	TWh	63		CSD-13 Policy Index	0.4
	Population	'000	5,700		Perf. (WSS Access)	/
	Urban population/total	%	21%			
	Human development	index	0.601			
	GDP (PPP)	\$/cap	2,039			
	Contribution of agri. to GDP	%	43%			
	Investment climate	index	0.49			
	ODA for water sector/y	\$/cap	1.78			
	Storage capacity surface water	km ³	7.31			
Irrigated area equipped/pot.	%	26%				

Linking Policy & Performance

Lao PDR is a country which is rich in water resources. However, few of the available water resources have been developed.

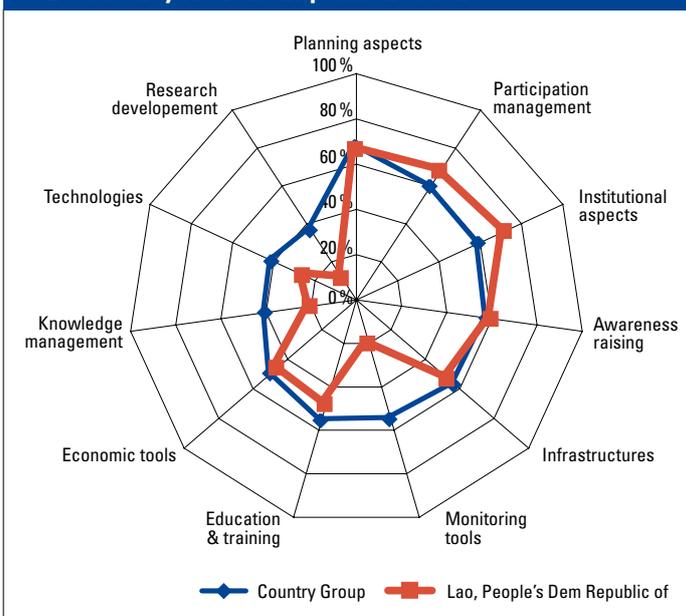
Water and other related development plans and strategies have been developed for various sectors by various ministries and agencies. No overall strategy or action plan for the water sector has been prepared at either a national or river basin level. The level of awareness of the need for an integrated water resources management (IWRM) plan and its implementation is quite low at both the national and local level.

According to the 2005 census data, around 67 per cent of households in urban areas have access to clean water. In rural areas with access to roads only 27 per cent of the population has access to clean water, while in rural areas without road access only 1 per cent has access to clean water. According to the Lao PDR Expenditure and Consumption Survey (2002/03) almost half of the total households in Laos do not use any type of toilet. Lack of sanitary facilities is particularly obvious in rural areas. About 27 per cent of rural population uses septic toilets and about 10 per cent use pit latrines or other systems. No urban centres have comprehensive piped sewerage systems or waste water collection, treatment and disposal systems, including Vientiane, the capital.

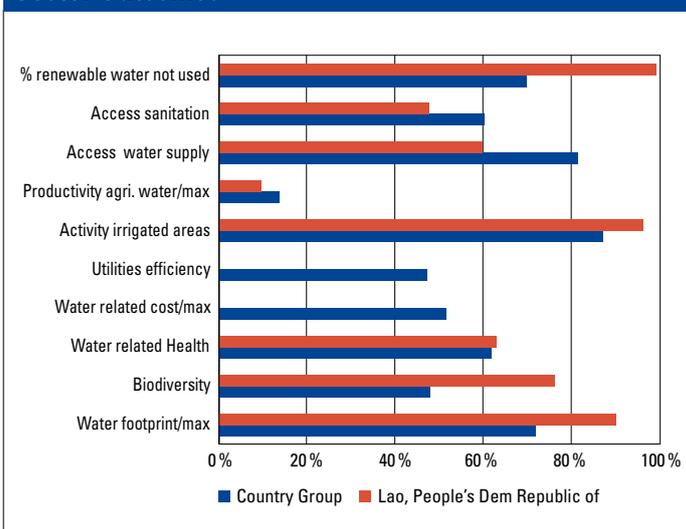
In spite of ongoing attention, health and its relationship to safe drinking water and sanitation remains a pressing social issue for Laos. There are regular outbreaks of cholera and dysentery, especially in remote provinces. The government's ability to fund and coordinate the necessary investment and the ability of users to pay for services are limited.

Most funds for public infrastructure come from external sources (bilateral and multi-lateral agencies). Sustainable funding of water resource management continues to be a challenge. These financial limitations are not unique to water management agencies, although they may be made worse by the lack of a water sector strategy which would lay out approved priorities on which to base agency budget requests.

CSD-13 Policy Actions Implementation



Sector Outcomes



17. Madagascar

	Profile			Typology	Context (HDI)		/
	Renewable water/y	m³/cap	18,118		CSD-13 Policy Index	0.5	
	Hydropower capability/y	TWh	180				
	Population	'000	18,600		Perf. (WSS Access)	-	
	Urban population/total	%	27%				
	Human development	index	0.533				
	GDP (PPP)	\$/cap	923				
	Contribution of agri. to GDP	%	27%				
	Investment climate	index	0.61				
	ODA for water sector/y	\$/cap	0.56				
	Storage capacity surface water	km³	0.493				
Irrigated area equipped/pot.	%	72%					

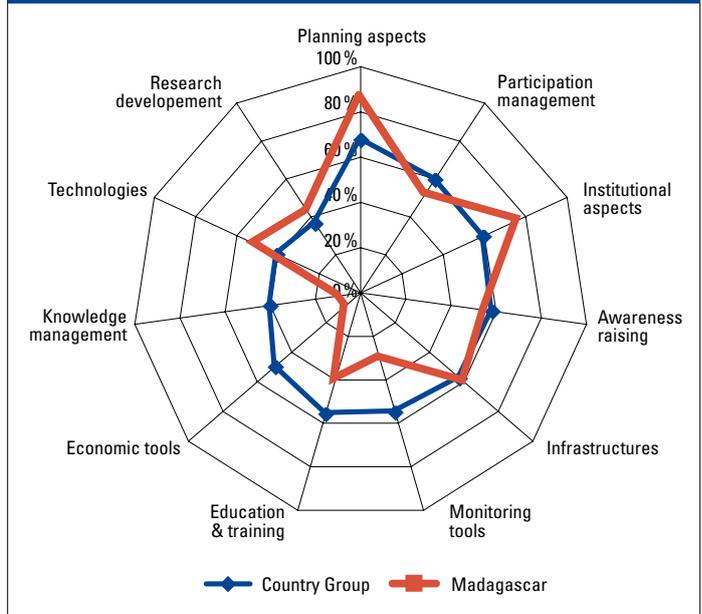
Linking Policy & Performance

According to the Water Law, drinking water and sanitation provision are the responsibilities of local authorities (municipalities and communes), but they can contract to other service providers. The legislation seeks to liberalise the water and sanitation sector. Simultaneously, through the IWRM, it promotes the integration and involvement of communities, the private sector and NGOs in the management of the systems and the management of water resources. The specific institution created to coordinate and implement the IWRM (the National Authority of Water and Sanitation “ANDEA”) is developing very slowly and to-date it is not yet fully operational.

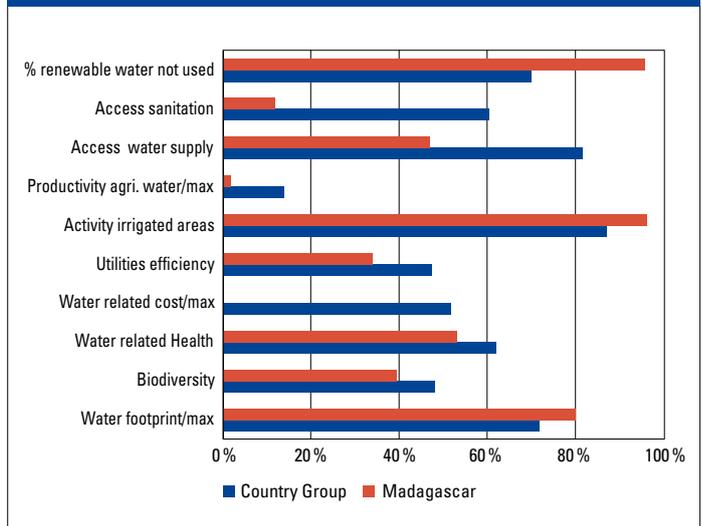
Despite the good development of legislation, policy and strategy as well as institutional frameworks, access to water (40 percent) and sanitation (52 percent) are low and the issues of quality are still a significant concern. Several factors are currently impeding the development of the sector. (i) A lack of knowledge or misunderstanding about the legislation. (ii) A lack of institutional capacity and coordination. At the grassroots level, communes (local authorities) sometimes do not have the management and technical capacity to address the basic needs, in terms of water supply and sanitation, of the local population. Water resources management and environmental flows are relegated to secondary consideration. (iii) Limited financing mechanisms, particularly sustainable financing instruments and the dependence on funding donors and agencies. The sector is highly project-dependent. The Water Funds mechanism stipulated in the law has not yet been set up. (iv) There seems to be an underestimation of the potential roles of communities as stipulated in the legal framework.

A platform called the “WASH-Diorano Initiative”, promoted by the WSSCC, has been formalised through a decree by the Government of Madagascar. The national WASH Initiative now has its charter and the setting up of decentralised WASH committees is ongoing. These committees are active in information exchange, education and communication as well as the promotion of low-cost and adequate technologies for hygiene.

CSD-13 Policy Actions Implementation



Sector Outcomes



18. Mauritania

	Renewable water/y	m ³ /cap	3,800	Context (HDI)	/
	Hydropower capability/y	TWh			
	Population	'000	3,000		
	Urban population/total	%	40 %	CSD-13 Policy Index	0.4
	Human development	index	0.55		
	GDP (PPP)	\$/cap	2,234	Perf. (WSS Access)	-
	Contribution of agri. to GDP	%	25 %		
	Investment climate	index	0.53		
	ODA for water sector/y	\$/cap	3.74		
	Storage capacity surface water	km ³	0.89		
Irrigated area equipped/pot.	%	18 %			

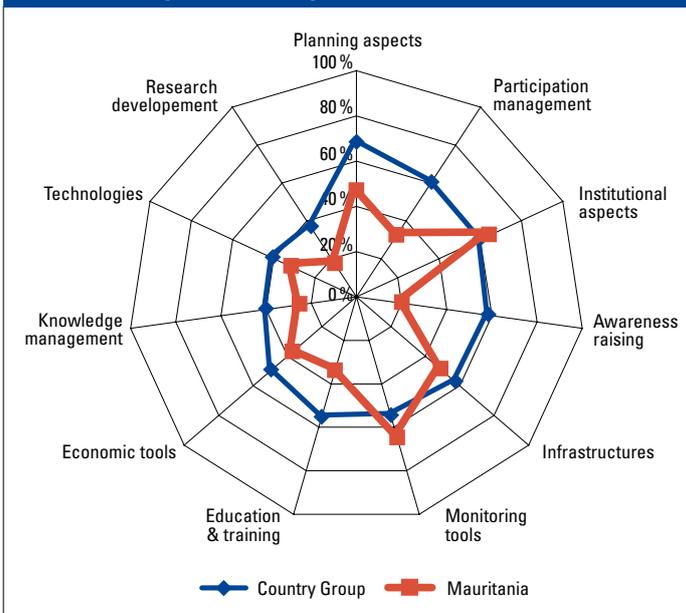
Linking Policy & Performance

In 2006, drinking water provision in rural areas of Mauritania was estimated at 49 per cent. Access to decent sanitation was estimated at 20 per cent. Thus the majority of localities do not have a suitable water system which is a contributory factor in the degradation of public health. There are several factors which contribute to this situation. The water sector does mobilise financial support, but implementation does not bring about the expected results partly because of a lack of human resources and frequent political instability.

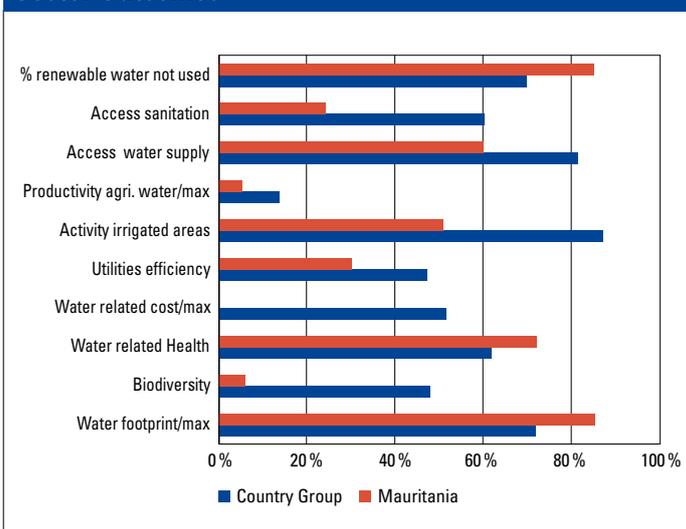
This general situation gives rise to the following issues. (i) There is no coordination framework or structure between the various government agencies in the water and the sanitation sectors. Nor is there coordination between them and private operators for pursuing possible synergies between various actions (which are often rather redundant). This results in inappropriate competition between these public services, when they should be complementary in their respective roles. (ii) There are no operators in the field of liquid sanitation except private cleaners of septic tanks. There is no sanitation infrastructure in the different cities and there are no comprehensive sanitation master plans. (iii) The management of surface water (dams, rivers, etc.) is not the responsibility of the Ministry for Hydraulics and Energy, but of the Ministry for Agriculture and Cattle Farming, raising problems in relation to new approaches for implementing an Integrated Management of Water Resources. (iv) There is better knowledge and information on the behaviour of the Senegal River (shared with Senegal, Mali and Guinea) thanks to its common management and its charter. This is not the case for the aquifers that supply more than 70 per cent of the populations with water. (v) Because of the limited number of technical personnel and qualified university graduates, the absorption capacity of investments and financial resources is very low. (vi) The absence of incentives for field level staff is demotivating and hampers the implementation of projects.

IPCC climate change scenarios project a mean annual temperature increase of 1.3 to 3.8 °C by the 2060s, and 1.8 to 6.0 °C by the 2090s with larger effects on the interior regions in comparison with the coastal areas. The mean annual rainfall tends to decrease, with scenario means between -7 and -25 % by the 2090s.

CSD-13 Policy Actions Implementation



Sector Outcomes



19. Mexico

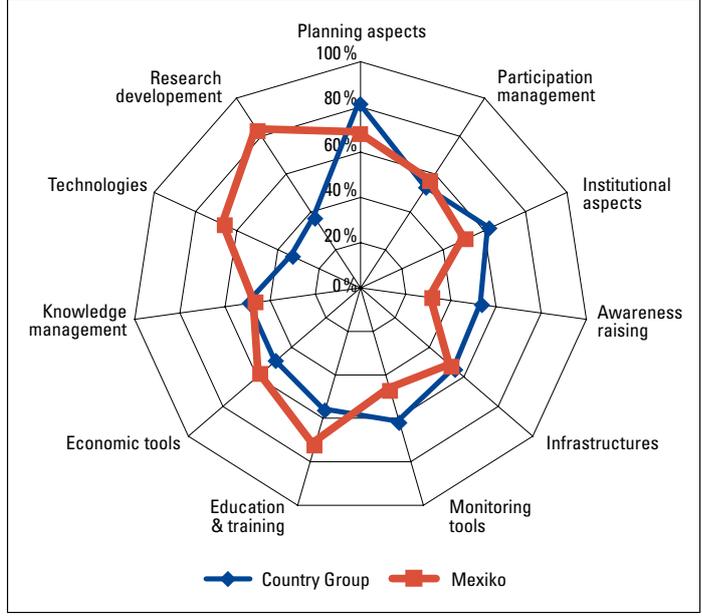
	Profile			Typology	Context (HDI)		+
	Renewable water/y	m ³ /cap	4,384		CSD-13 Policy Index	0.8	+
	Hydropower capability/y	TWh	49				
	Population	'000	104,300		Perf. (WSS Access)	+	
	Urban population/total	%	76%				
	Human development	index	0.829				
	GDP (PPP)	\$/cap	10,751				
	Contribution of agri. to GDP	%	4%				
	Investment climate	index	0.66				
	ODA for water sector/y	\$/cap	0.46				
	Storage capacity surface water	km ³	180				
Irrigated area equipped/pot.	%	64%					

Linking Policy & Performance

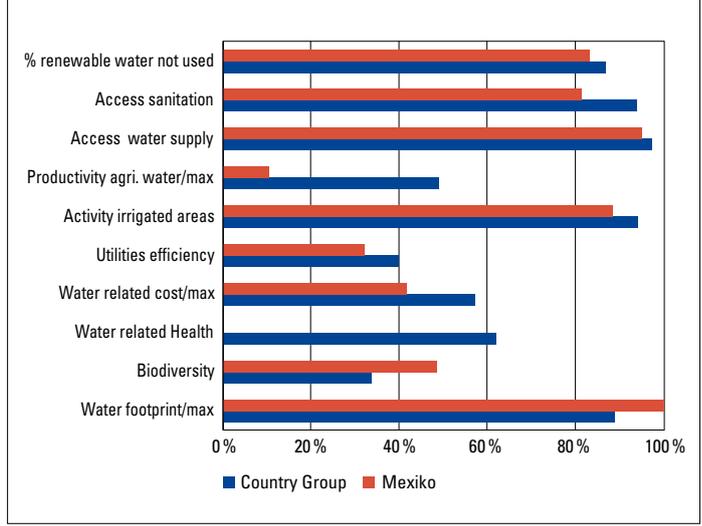
To improve access to basic water services, Mexico has developed an institutional framework, in which water is a priority. In fact, water is considered a matter of security in the national development planning system. The water sector is regulated by federal law. A Federal Water Authority has jurisdiction at state and municipal levels and a full range of political instruments. It promotes the participation of the stakeholders, and is based on an equity principle that provides subsidies for poor people. The municipalities are responsible of water and sanitation services. National access to sanitation averages 86 percent; in the urban areas it is 94 per cent while in the rural localities it is only 57 per cent. There is a notorious lack of official interest in research and massive promotion of on-site, ecological sanitation systems and low-cost sanitation alternatives. There is a need to promote gender-sensitive sanitation and hygiene education, to promote public hygiene campaigns using the mass communication media, to include hygiene education in school curricula and to ensure separate sanitary facilities, especially in the rural areas. The present wastewater treatment accommodates 34 per cent of the total sewage volume (the target for 2012 is to treat 60 percent). The Mexican authorities are open to, and interested in looking at, new business models for wastewater treatment and the reuse of treated water. Where IWRM is concerned, the country has improved water governance by strengthening the support of local authorities and communities through committees, encouraging social participation, rehabilitating watersheds, enhancing the sustainability of ecosystems, preventing and mitigating meteorological disasters, improving the efficiency in water use and involving all stakeholders. The country has developed and strengthened its monitoring systems on the quantity and quality of surface and groundwater resources at federal and local levels. It has also supported more effective water demand and water resource management in all sectors, looking for more efficient water use, especially in agriculture, by improving infrastructure and farmers' education and training.

The projected annual temperature increase of 1.1. to 3°C by the 2060s and 1.3 to 4.8°C by the 2090s, will be more rapid in the north and central regions of the country. The annual rainfall decreases for almost all seasons and IPCC scenarios are negative. The coastal lowlands may suffer from a sea-level rise of the Pacific (0.13 to 0.51 m) and Atlantic (0.13 to 0.56 m).

CSD-13 Policy Actions Implementation



Sector Outcomes



20. Morocco

Profile	Renewable water/y	m ³ /cap	951	Typology	Context (HDI)	/	
	Hydropower capability/y	TWh	5		CSD-13 Policy Index	0.6	/
	Population	'000	30,500				
	Urban population/total	%	59%				
	Human development	index	0.646				
	GDP (PPP)	\$/cap	4,555				
	Contribution of agri. to GDP	%	13%				
	Investment climate	index	0.57				
	ODA for water sector/y	\$/cap	2.75				
	Storage capacity surface water	km ³	16.091				
Irrigated area equipped/pot.	%	87%					

Linking Policy & Performance

Morocco is characterised by the scarcity of its water resources. Its potential of water per capita places it in the category of countries that have water stress, and in 20 years it will fall into the category of countries that have a shortage of water. Water resources are not well distributed in time and space, and are subject to severe constraints such as pollution, soil erosion, over-exploitation of groundwater and to extreme phenomena, such as droughts and floods.

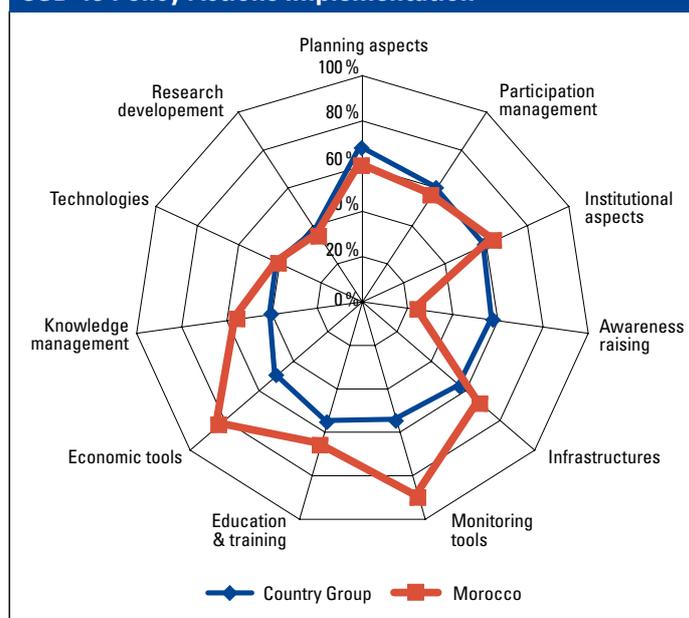
According to the IPCC scenarios the mean annual temperature increases by 1.1 to 3.5 °C by the 2060s, and 1.4 to 5.6 °C by the 2090s. This increase will affect the interior regions of Morocco faster than the coastal areas. The models are also consistent with projecting decreases in annual rainfall by -15 to -29 % (scenarios means).

The water policy in Morocco performs well. It has a solid infrastructure, good skills and a strong guarantee to provide drinking water for more than 80 % of the population and to develop irrigated agriculture, which contributes significantly to meeting food needs.

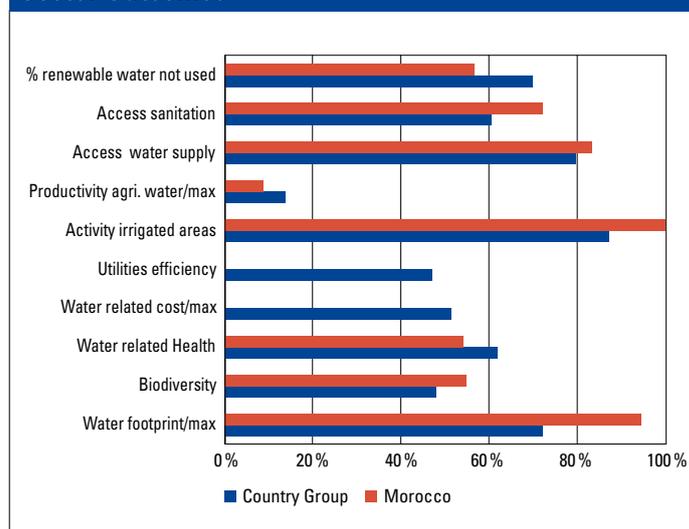
Morocco has set ambitious strategic goals, such as bringing drinking water to rural areas (which is now on the way to being achieved) and reducing water pollution by 60 % by 2015. A water strategy, currently under development, will set the guidelines for solutions to challenges related to water supply in areas where conventional water resources are exhausted. It addresses management of water demand, governance and funding requirements that go beyond the budgetary resources of the government.

The assessment of progress towards sustainable development confirms the sound level of achievement of water mobilization infrastructure, a very satisfactory level of access to drinking water in cities, and considerable improvement, in recent years, of access to drinking water in rural areas. The assessment identifies a delay in the implementation of sanitation actions and its consequence (the deterioration of water quality) and a delay in the implementation of IWRM. The water and sanitation sectors are well managed, but capacity-building is necessary for local communities. The assessment also indicates that the participatory approach is not well supported by the government, and research is not a priority. There is a good level of sustainability for the majority of actions. The remarkable performance of the mechanisms that provide the poor with access to basic services, such as drinkable water and sanitation, is noted.

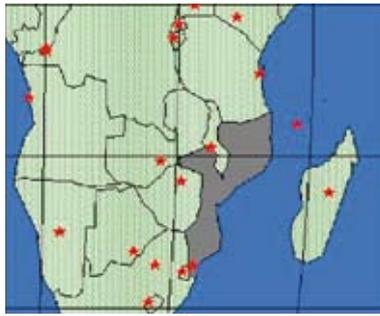
CSD-13 Policy Actions Implementation



Sector Outcomes



21. Mozambique

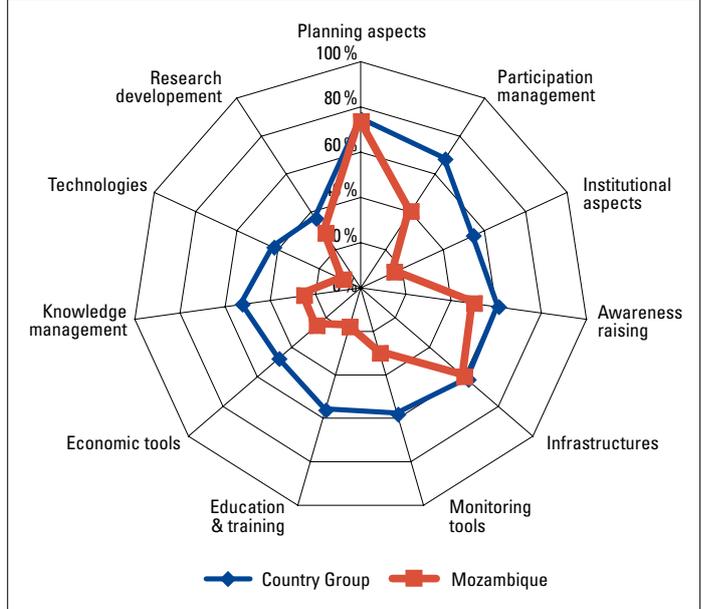


Profile			Typology	
Renewable water/y	m ³ /cap	10,537	Context (HDI)	-
Hydropower capability/y	TWh	38	CSD-13 Policy Index	0.3
Population	'000	20,500		
Urban population/total	%	35%	Perf. (WSS Access)	-
Human development	index	0.384		
GDP (PPP)	\$/cap	1,242		
Contribution of agri. to GDP	%	21%		
Investment climate	index	0.57		
ODA for water sector/y	\$/cap	2.39		
Storage capacity surface water	km ³	64.474		
Irrigated area equipped/pot.	%	4%		

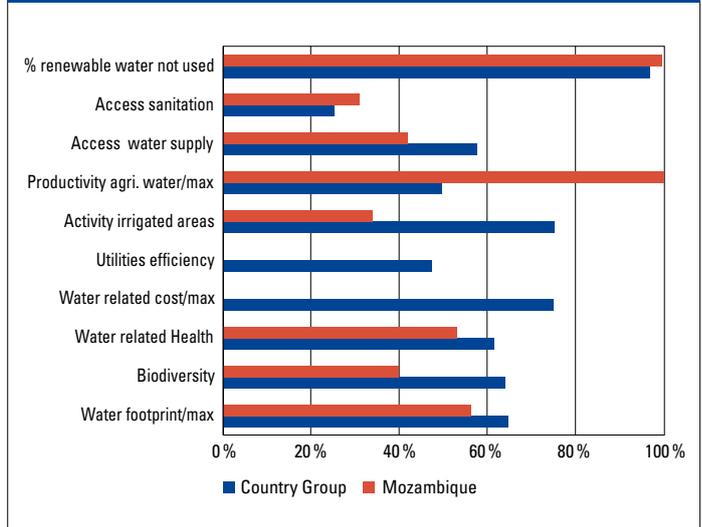
Linking Policy & Performance

The Mozambique water and sanitation sector is complex both in terms of institutional arrangements and the financial mechanisms in place to support policy implementation. There are several agencies with significant influence in the overall sector performance at various levels. In the urban environment there is a mixture of local government and central government depending on the size of the city and complexity of the issue at hand. The complexity is far less in the case of rural sanitation where NGOs and the government (through the Ministry of Education and the National Directorate of Water) are the only relevant actors. While the legislative framework, strategic documents, and funding of the water sectors is sound, the sanitation sector still requires considerable efforts in terms of organization. The country has implemented, over time, different, isolated initiatives to tackle the problem of sanitation. Some initiatives were national programmes drawn in an international context while others were small to large scale projects supported by specific donors to serve a particular region of the country. The MDGs are reflected in the Action Plan for Poverty Alleviation (PARPA) and the country's strategic vision for 2025 that calls for an increase in the delivery of sustainable services of water supply and sanitation. The country has managed to improve sanitation coverage relative to the situation at independence in 1975, but the increase has not been sustained, mainly as a consequence of the civil war that ravaged the country for 16 years shortly after independence. IPCC scenarios project for the country a mean annual temperature increase of 1.0 to 2.8°C by the 2060s, and 1.4 to 4.6°C by the 2090s. Current models are not consistent in projecting either increases or decreases in annual rainfall. Seasonally the picture is more coherent, with projected decreases in dry season rainfall and increases in wet season rainfall. Coastal areas are expected to be affected by sea-level rise (0.13-0.56 m by the 2090s).

CSD-13 Policy Actions Implementation



Sector Outcomes



22. Nicaragua

Profile	Renewable water/y	m ³ /cap	35,762	Typology	Context (HDI)	/
	Hydropower capability/y	TWh	10		CSD-13 Policy Index	0.4
	Population	'000	5,500		Perf. (WSS Access)	/
	Urban population/total	%	59%			
	Human development	index	0.71			
	GDP (PPP)	\$/cap	3,674			
	Contribution of agri. to GDP	%	17%			
	Investment climate	index	0.63			
	ODA for water sector/y	\$/cap	4.32			
	Storage capacity surface water	km ³	0.25			
Irrigated area equipped/pot.	%	9%				

Linking Policy & Performance

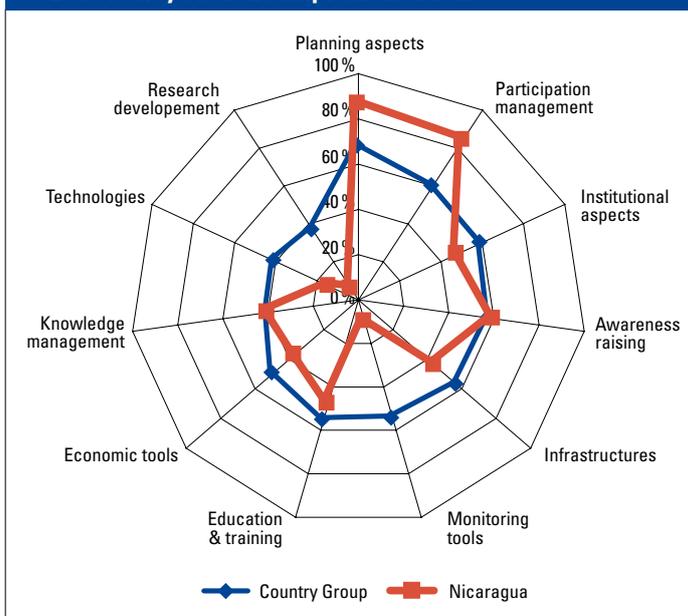
Nicaragua is the second poorest country in Latin America (45.8 per cent of the population is poor and 15.1 per cent live in extreme poverty). The drinking water and sanitation sector is very dependent on international cooperation. Poor hygienic habits are responsible for the prevalence of diarrhoea (the second most frequent of infantile illnesses). The official WSS coverage levels should be used with caution. Many cities have a drinking water system which is not functional during summer time (December to April) or serving only part of the population. Only the main cities have some kind of sanitation coverage. The pollution of the catchment areas (surface and groundwater) and the depletion of rivers and lagoons have been growing problems in the last 20 years.

The WSS sector comprises the following main institutions, the National Water and Sanitation Commission, CONAPAS (which presides over the sector), the recently created Commissariat of Drinking Water and Sanitation, INAA (which was the regulatory entity), the Nicaraguan Aqueducts and Sewage Systems Enterprise, ENACAL (responsible for planning, design, construction, O&M) and the Emergency Social Investment Fund, FISE. The Drinking Water and Sanitation Committees (CAPS) are responsible for the O&M of the rural aqueducts. There are about 5,000 CAPS in the country and their work is fundamental for the sustainability of the systems. Since they do not have legal status, the CAPS do not have access to financing from private banking that would allow them to improve their systems.

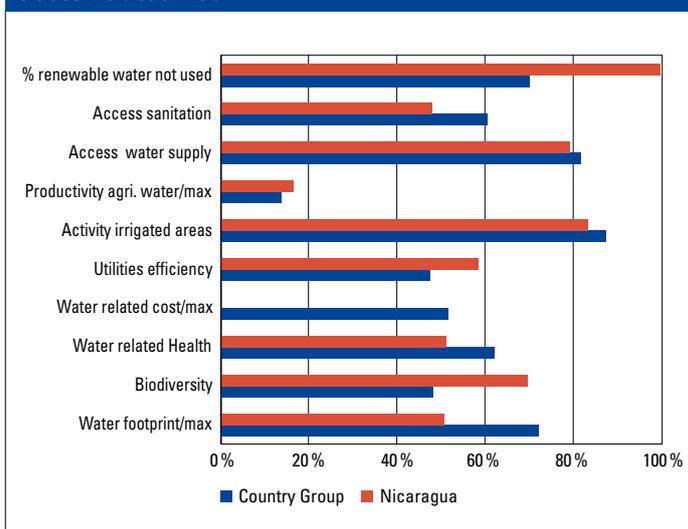
Although the water and sanitation sectors have been prioritised in the National Plan of Development (PND), this priority is not reflected in the Republic's National Budget. The information systems are deficient; they are partially developed without an overall focus and no reliable data. Research and technological development in drinking water and sanitation is limited to isolated investigations, generally promoted by international cooperation agencies. Integrated Water Resources Management (IWRM) is associated with Integrated Watershed Management and both are poorly developed.

According to the IPCC scenarios the mean annual temperature increases by 0.6 to 2.7°C by the 2060s, and 1.2 to 4.5°C by the 2090s – more rapid in the areas in the Northeast. The median values of the different models on rainfall are consistently negative for all seasons and emissions scenarios, with values of -8 to -21%.

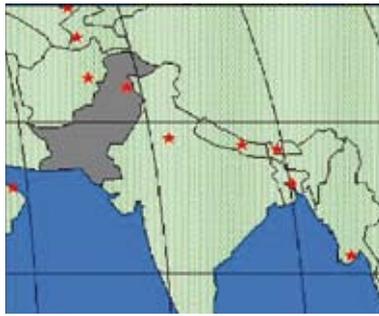
CSD-13 Policy Actions Implementation



Sector Outcomes



23. Pakistan



Profile	Renewable water/y	m ³ /cap	1,479	Typology	Context (HDI)	/
	Hydropower capability/y	TWh	219		CSD-13 Policy Index	0.9
	Population	'000	158,100			
	Urban population/total	%	35%		Perf. (WSS Access)	/
	Human development	index	0.551			
	GDP (PPP)	\$/cap	2,370			
	Contribution of agri. to GDP	%	22%			
	Investment climate	index	0.58			
	ODA for water sector/y	\$/cap	0.41			
	Storage capacity surface water	km ³				
Irrigated area equipped/pot.	%					

Linking Policy & Performance

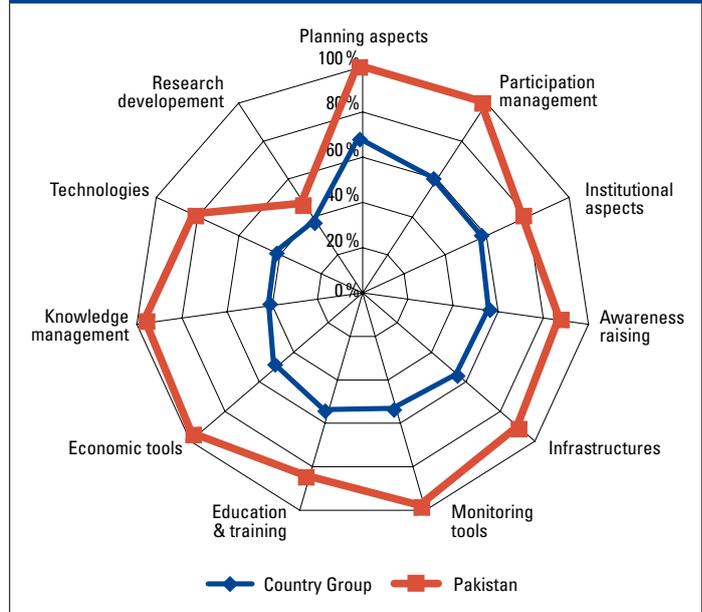
This decade is considered to be the “Water Decade” as a number of very important key developments have taken place in the water and sanitation sectors. Water has been duly recognised as an economic and social good that should be allocated first to satisfy basic human needs. Access to safe drinking water and sanitation is now considered a human right.

In this respect, an important development in Pakistan was a draft National Water Policy (NWP) prepared/sponsored by the federal Ministry of Water and Power in close collaboration with all key stakeholders of the water sector including NGOs and Civil Society representatives. The draft has been reviewed and approved by most of the water sector stakeholders in the country and is presently under review by the government for its approval and adoption. The draft NWP identifies the key issues of the water sector in Pakistan, such as low per capita water availability, absence of holistic, integrated and sustained approaches, sub-optimal use and low productivity of water, extensive seepage losses in the irrigation systems, inadequate operations and maintenance and poor cost recovery, excessive groundwater pumping, deteriorating institutional capacities and poor linkages between water, agriculture and rural development projects and related research, amongst others.

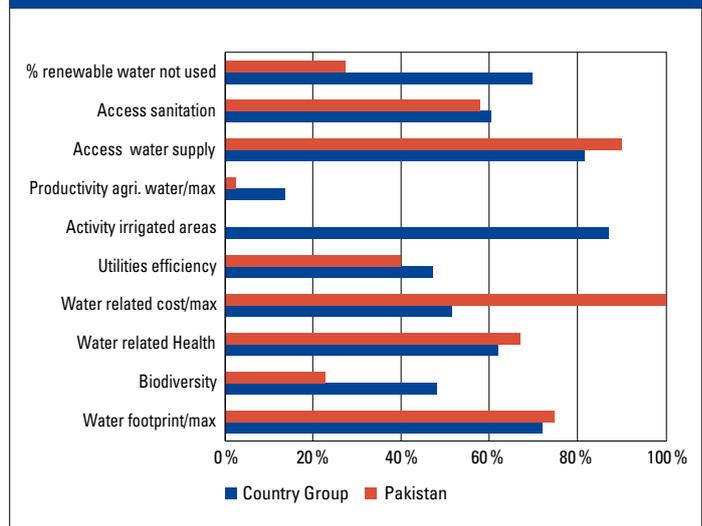
The National Drinking Water Policy (NDWP) approved by the Federal Government was launched in 2006 to ensure safe drinking water for the entire population, at an affordable cost in an equitable, efficient and sustainable manner. Water infrastructure and services will be pro-poor and gender-sensitive. The plans will be realistic and targeted to the needs of the poor, and will include targets and indicators of progress at all levels. Under the Local Government Act of 2001, all local governments will develop Action Plans at the municipality level to ensure safe drinking water for all in keeping with Medium Term Development Framework (2005-2010) and the Millennium Development Goals. Special attention will be paid to disadvantaged areas/communities. The total public sector expenditures (incurred by the federal and provincial governments) in the water and sanitation sectors (WatSan) have doubled in the five years between 2001 and 2006 and are expected to increase further.

The IPCC scenarios project a mean annual temperature increase of 1.4 to 3.7°C by the 2060s, and 1.9 to 6.0°C by

CSD-13 Policy Actions Implementation



Sector Outcomes



the 2090s in Pakistan, with the most rapid warming rate in the northern regions. The means of the different rainfall projections are close to zero, though with a tendency of decreases in rainfall from January to June and increases from July to August.

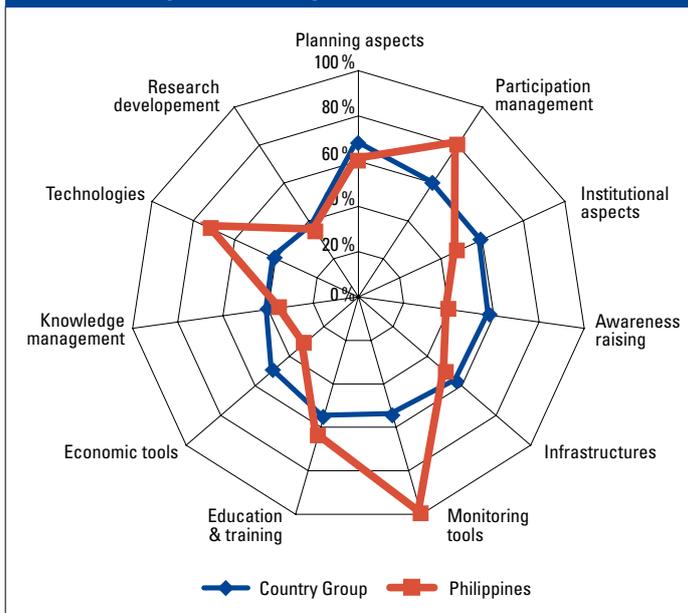
24. Philippines

	Renewable water/y	m ³ /cap	5,662	Context (HDI)	/
	Hydropower capability/y	TWh	20		
	Population	'000	84,600		
	Urban population/total	%	63%	CSD-13 Policy Index	0.6
	Human development	index	0.771		
	GDP (PPP)	\$/cap	5,137	Perf. (WSS Access)	+
	Contribution of agri. to GDP	%	14%		
	Investment climate	index	0.57		
	ODA for water sector/y	\$/cap	0.85		
	Storage capacity surface water	km ³			
Irrigated area equipped/pot.	%	50%			

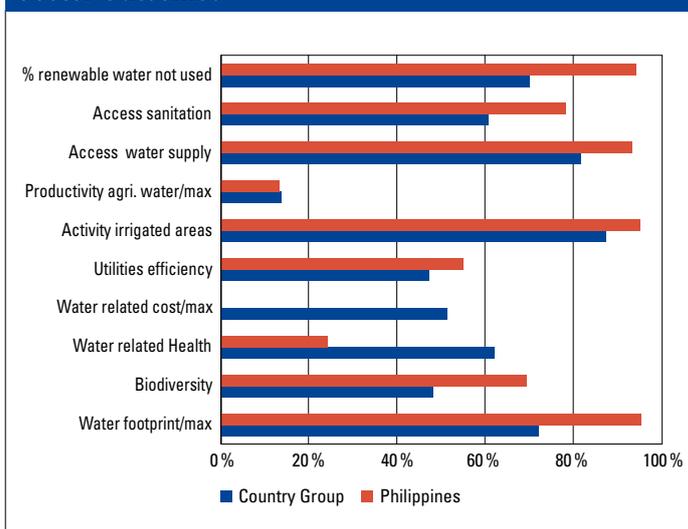
Linking Policy & Performance

Given the current water and sanitation coverage, Asia Water Watch predicts that the Philippines will not attain its MDG target for water supply, but will attain the target for sanitation. Water coverage has stagnated over the last 5 years. This is due to a fragmented institutional setup and inefficient water service providers. While policies, regulations and laws are there, planning and implementation are weak. The rural water supply sector, and all water and sanitation functions, was devolved to the local government units (LGUs) under the Local Government Code of 1991. This delegation was made without much support to develop their technical and institutional capacity to plan and implement water and sanitation programmes. The sanitation sector suffers from the lack of a strong lead institution at the Department of Health and shows weak performance especially in the rural areas. Sanitation has not been prioritized by the local governments. The workforce necessary to promote environmental sanitation has not been provided as was the case prior to the Local Government Code, when there were personnel in each municipality for the sanitation programmes. Hygiene education, and its linkage to water and sanitation, is also weak. Schools provide the opportunity for hygiene education through the health and science curriculum where hygiene, use of water and proper sanitation are included. However, classroom education is not supported by the necessary infrastructure as many schools lack toilets and hand washing facilities. The Philippines Government is addressing these issues through the current preparation of a roadmap for the water supply sector which will be followed by another for the sanitation sector. Roadmap recommendations include providing technical and institutional support to local governments and water service providers. The master plan for the water supply and sanitation sectors will be updated. The sanitation sector will also benefit from the current preparation of the national sewage and sanitation plan. The government is also trying to get provinces to adopt the IWRM by setting up provincial water resources management offices in a number of provinces and through the proposed creation of river basin offices in major river basins.

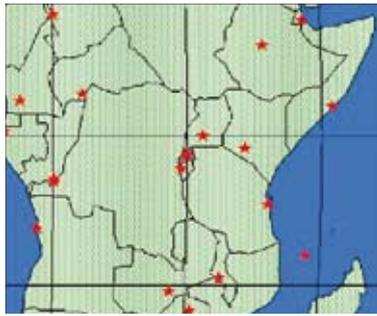
CSD-13 Policy Actions Implementation



Sector Outcomes



25. Rwanda



Profile			Typology	
Renewable water/y	m ³ /cap	565	Context (HDI)	—
Hydropower capability/y	TWh	1	CSD-13 Policy Index	0.5
Population	'000	9,200		
Urban population/total	%	19%	Perf. (WSS Access)	—
Human development	index	0.452		
GDP (PPP)	\$/cap	1,206		
Contribution of agri. to GDP	%	39%		
Investment climate	index	0.52		
ODA for water sector/y	\$/cap	1.32		
Storage capacity surface water	km ³			
Irrigated area equipped/pot.	%	5%		

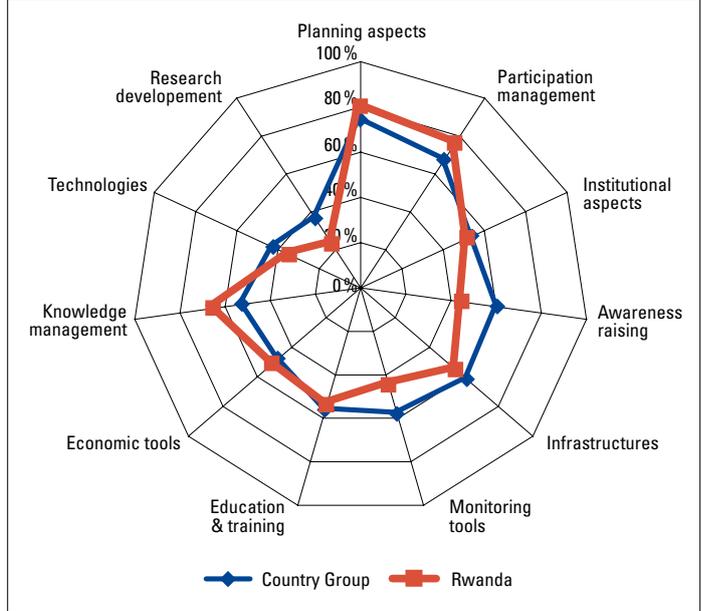
Linking Policy & Performance

The water and sanitation sectors have been prioritised among the key pillars for sustainable development through the MDGs and Vision 2020 goals and through the Economic Development and Poverty Reduction Strategy (EDPRS 2008-2012). The national policy for water and sanitation, as well as other related national sector policies on environmental protection, land conservation, energy, health, decentralization and good governance, and investment, has been put in place. A Water and Sanitation Coordination Unit has been appointed in the Ministry of Natural Resources. An independent regulatory agency has been established. A national programme on water and sanitation (PNEAR) as well as a number of projects are being implemented in rural areas. A national project on water resources management (PGNRE) has also been established to promote IWRM. An agency for water supply in urban zones (ELECTROGAZ) has been appointed. The Rwanda Environment Management Authority, REMA, which monitors EIAs, project implementation and public awareness is in place.

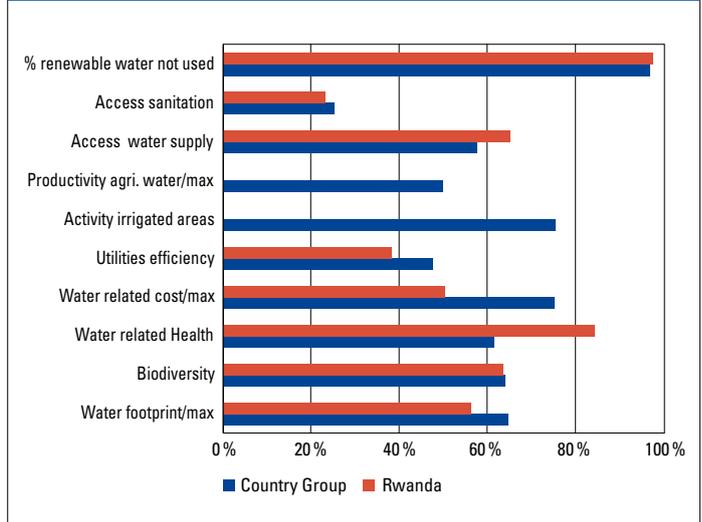
A number of factors contribute to the development of the water and sanitation sectors in Rwanda. These include the new funding approach for donors (budget support); the regional initiatives, such as the Nile Basin Initiative, Lake Victoria Initiative, GWP, GWA, which facilitated the regional integration and promoted trans-boundary, and IWRM. There is also the Water and Sanitation Stakeholders Coordinating Committee which brings together government, donors, the private sector and civil society. The private sector and local communities participate in project implementation. Health workers participate in sanitation and hygiene education at the grassroots level; water and sanitation services are decentralised.

Rwanda is however facing challenges to achieving efficient sector reform and to meeting the MDGs and Vision 2020 goals. It lacks a legal framework; a national agency for water and sanitation; human resources at all levels to monitor the sector; sufficient funds, in particular for sanitation; harmonised water and sanitation data (which are scattered among different institutions); and a communication strategy for behaviour change.

CSD-13 Policy Actions Implementation



Sector Outcomes



26. Samoa

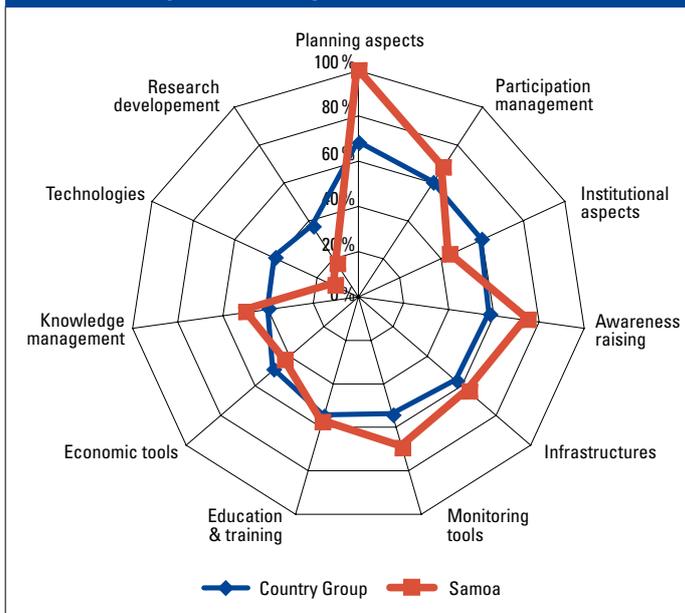
	Renewable water/y	m ³ /cap		Profile	Context (HDI)	/	
	Hydropower capability/y	TWh					
	Population	'000	200				
	Urban population/total	%	22 %		CSD-13 Policy Index	0.5	
	Human development	index	0.785				
	GDP (PPP)	\$/cap	6,170				
	Contribution of agri. to GDP	%	11 %				
	Investment climate	index			Typology	Perf. (WSS Access)	+
	ODA for water sector/y	\$/cap	12.7				
	Storage capacity surface water	km ³					
Irrigated area equipped/pot.	%						

Linking Policy & Performance

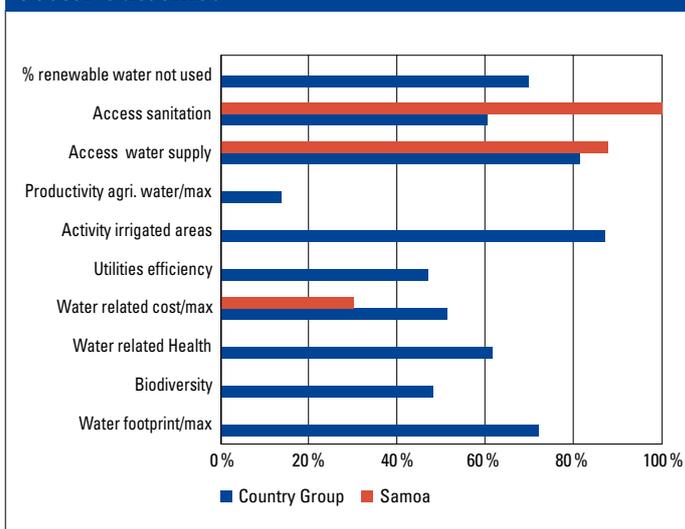
Samoa has made reasonable progress in the implementation of policy actions by adopting a sector-wide approach embracing all aspects of water resource management, water use and wastewater. Coordination is being strengthened by the formation of a joint Water Sector Steering Committee which is responsible for guiding policy and planning processes. Civil society groups are broadly involved in the water sector and have a meaningful voice in the policy process. The policy and regulatory framework is being strengthened, the government has prioritised investments for water and sanitation, and considerable donor support is now being focused in this area (mostly infrastructure development).

Information on water resource quantity and quality is sparse. Attention is now being directed towards developing and implementing effective monitoring systems. To-date there has been only limited activity to protect and conserve water resources, but considerable future programme support is being targeted in this area. Though women and children are the most affected groups in terms of water usage, women so far have had relatively little involvement in water management issues. The participation of women will be critical in controlling water demand and in improving sanitation, hygiene practices and management, particularly of independent water schemes. The Water Sector Plan does not at present adequately reflect related gender issues. Improving public health remains a challenge for Samoa, despite its excellent economic performance and rising GDP per capita. Water related diseases remain a concern, particularly in rural areas which have limited access to health services. Sector strategies need to be more specific in targeting support to the disadvantaged and more remote communities. More investment in research and development for appropriate, environmentally friendly and low-cost alternative technologies is required. Building and retaining human capacity in a small island remains a significant challenge. However, an increased awareness and involvement of community groups in water resource management and in water and sanitation provision, including the formation of an Independent Water Schemes Association, provides some optimism for the future.

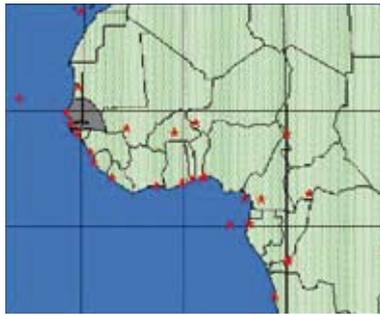
CSD-13 Policy Actions Implementation



Sector Outcomes



27. Senegal



Profile			Typology	
Renewable water/y	m³/cap	3,339	Context (HDI)	-
Hydropower capability/y	TWh	4		
Population	'000	11,800	CSD-13 Policy Index	0.7
Urban population/total	%	42%		
Human development	index	0.499	Perf. (WSS Access)	/
GDP (PPP)	\$/cap	1,792		
Contribution of agri. to GDP	%	18%		
Investment climate	index	0.59		
ODA for water sector/y	\$/cap	4.24		
Storage capacity surface water	km³	1.6		
Irrigated area equipped/pot.	%	29%		

Linking Policy & Performance

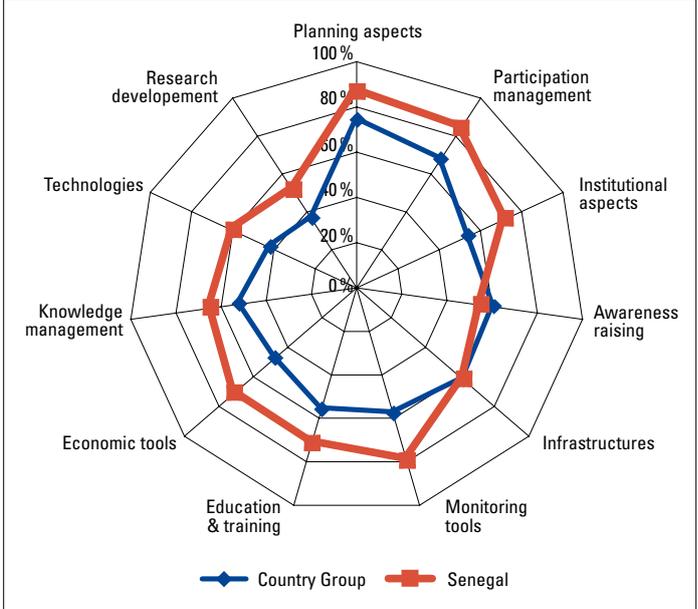
Water and sanitation reforms are identified as a priority in the poverty reduction strategy and in different sector programmes. Important initiatives were the establishment of the Millennium Water and Sanitation Programme (PEPAM) and the development of the IWRM Plan. A better definition of the roles and responsibilities of government agencies, the private sector, local authorities, NGOs and development partners has been achieved through the unified framework for action of the PEPAM. Efforts have been made to achieve synergy from the existing databases in the different water and sanitation agencies by creating a portal on water which informs all stakeholders of progress in the sector.

Empowerment of local communities and water users associations (ASUFOR) is ongoing with the disengagement of the Department of Maintenance (DEM). Capacity building activities are planned for national and local authorities and IEC component are under development for national water projects or programmes (PEPAM, PAQPUD, WAC II) to promote behaviour changes in relation to hygiene. Tools and sustainable financing systems have been developed to ensure the mobilization of resources, public or private, necessary for the maintenance and extension of drinking water and sanitation schemes and to ensure the long-term financial equilibrium of the sector.

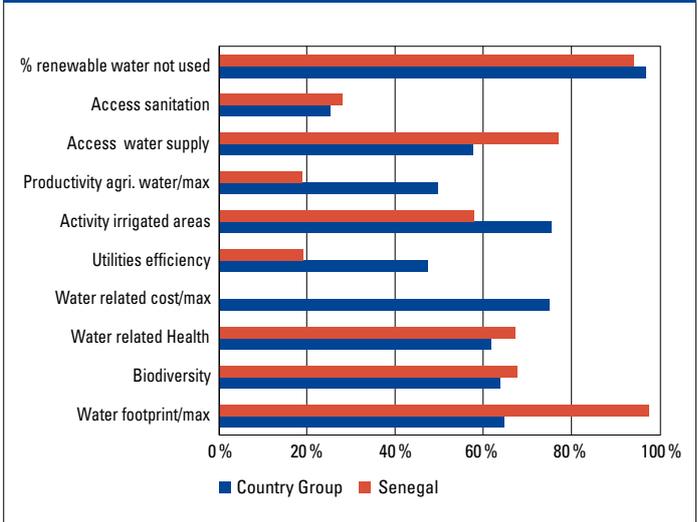
The good performance of Senegal on access to water and sanitation is mainly due to the 2005-2015 investment programme, developed under the PEPAM (for the first time a consistent budget is guaranteed for sanitation -58 percent). Low cost water technology and a set of technologies adapted for arid and semi arid areas were promoted in rural areas with support from development partners and researcher (i.e. CREPA). This explains the improved performance of Senegal in providing access in rural areas. Progress was also noted with the testing of technologies for de-fluoridation, desalination and wastewater reuse. But, greater efforts should be made to disseminate information on these issues, especially among the poor.

IPCC scenarios project a mean annual temperature increase of 1.1 to 3.1 °C by the 2060s, and 1.7 to 4.9 °C by the 2090s. This increase affects the country faster in the interior regions than in the coastal areas. The mean annual rainfall tends to decrease, particularly in the wet season, with ensemble means between +7 and -18% by the 2090s.

CSD-13 Policy Actions Implementation



Sector Outcomes



28. Sri Lanka

Profile	Renewable water/y	m ³ /cap	2,618	Context (HDI)	/
	Hydropower capability/y	TWh	7		
	Population	'000	19,100		
	Urban population/total	%	15%	CSD-13 Policy Index	0.6
	Human development	index	0.743		
	GDP (PPP)	\$/cap	4,595	Typology	Perf. (WSS Access)
	Contribution of agri. to GDP	%	17%		
	Investment climate	index	0.59		
	ODA for water sector/y	\$/cap	2.98		
	Storage capacity surface water	km ³	5.942		
Irrigated area equipped/pot.	%	100%			

Linking Policy & Performance

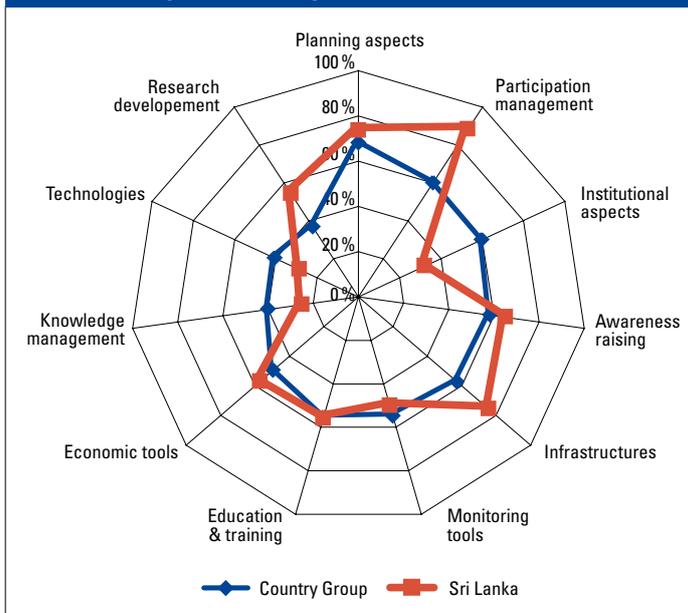
Sri Lanka is now categorised as a middle income country on the basis of its improved per capita income. Access to water supplies and sanitation service levels are high in urban areas and comparable with countries of higher levels of per capita income. Since independence in 1948, successive governments have followed people-friendly, welfare state policies in health, education, water supply and sanitation.

The implementation of policy actions on water supply is supported by a stronger policy framework as compared to sanitation and IWRM. This includes a national policy, financial support and a favourable institutional framework. There are strong, legally constituted organizations dedicated to water supply. Water supply is considered a convenience, necessary for maintaining health – even a luxury and a means of achieving political popularity.

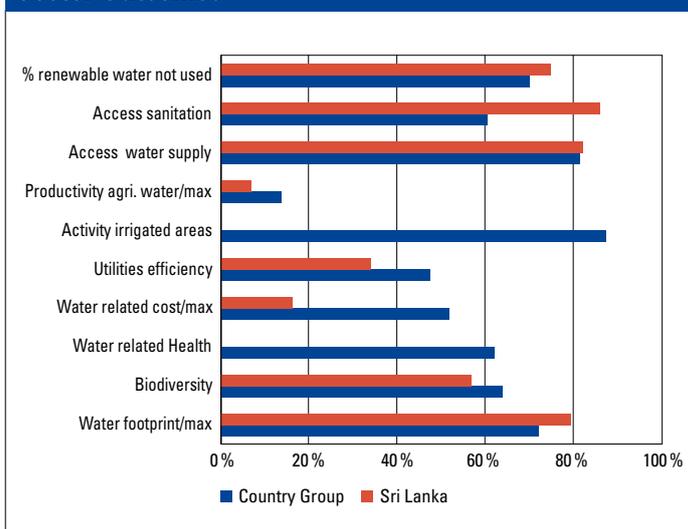
The sanitation sector does not enjoy all these positive considerations other than as a basic necessity and for the public health factors associated with it. Little infrastructure has been created after independence. Most of it was built during colonial times but is robust and still functions well. Nevertheless, there are remarkable weaknesses in sanitation and hygiene education. Sanitation lacks an institutional framework to provide policy and strategic direction. If direction had been provided, with reforms and modernization at the right intervals, the performance of the sector would have been better. Most sanitation and hygiene education infrastructure has been developed by using loans and grants funds from donor funded projects.

Water resources management (WRM) in Sri Lanka has experienced no significant change over many decades. There are several institutions involved and this situation has led to sector planning and development. Past efforts of the government to develop a national policy, legislation and institutional framework for IWRM have not yielded the desired results for various reasons. Another effort is being made with the assistance of the World Bank and so far it is progressing well. At present, implementation of some IWRM activities are being carried out fully or partly by different institutions. For instance, water quality management is the responsibility of the Environmental Authorities under the relevant legislation.

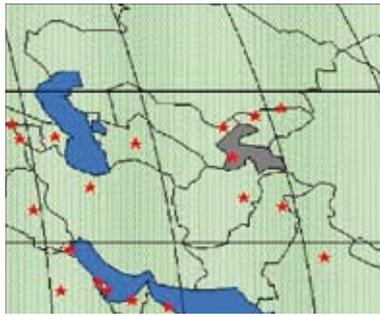
CSD-13 Policy Actions Implementation



Sector Outcomes



29. Tajikistan



Profile			Typology	
Renewable water/y	m ³ /cap	15,106	Context (HDI)	/
Hydropower capability/y	TWh	264	CSD-13 Policy Index	0.6
Population	'000	6,600		
Urban population/total	%	25%	Perf. (WSS Access)	/
Human development	index	0.673		
GDP (PPP)	\$/cap	1,356		
Contribution of agri. to GDP	%	23%		
Investment climate	index	0.57		
ODA for water sector/y	\$/cap	0.29		
Storage capacity surface water	km ³	28.97		
Irrigated area equipped/pot.	%	95%		

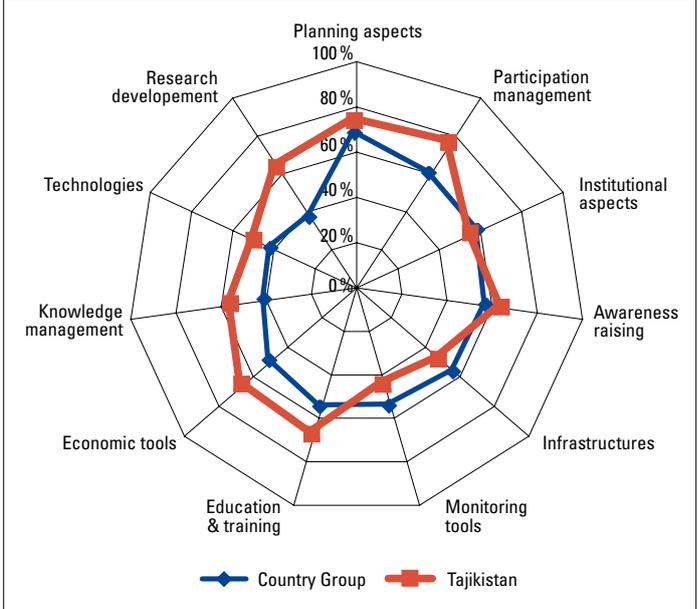
Linking Policy & Performance

The main institution is the Ministry of Land Reclamation and Water Resources, which is responsible for interstate relations with neighbouring countries in Central Asia (via the International Fund for Saving the Aral Sea and the Interstate Commission for Water Coordination), and implementation of the national water policy. The Provincial Departments of Land Reclamation and Water Resources are responsible for water services at the local level. The Tajikselkhozvodoprovodstroy (rural water authority), under the Ministry of Land Reclamation and Water Resources, and local administrations in the provinces are responsible for drinking water supply and sanitation in rural areas. In the cities, the main service providers are the respective Vodokanals. There are no research institutions for the water supply and sanitation sector. The private sector is not active in the sector.

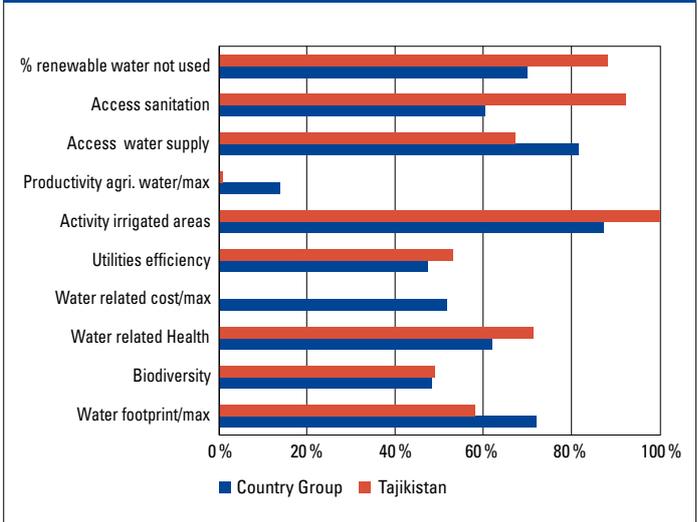
The civil war during the mid 1990s led to an almost complete destruction of water infrastructure. The water supply and sanitation facilities in Tajikistan are neither safe nor adequate. Meeting MDG 7's target 10 will require rehabilitating existing water systems which have deteriorated over the few last decades, and installing brand-new water infrastructure. Proper strategic documents were developed by the government with support from ODA, which clearly identified all problems and future actions (short, medium and long-term) for the irrigation sector and for WSS sector. The assessment of needs for water sector rehabilitation and development shows that the Tajik Government will not be able to complete programmes without financial and technical support from ODA.

Achieving poverty reduction in Tajikistan will depend on alleviating the poverty of the rural population. Poor water infrastructure and lack of proper equipment is the principal barrier for economic growth. The financial debt of farmers is another limiting factor for irrigation development. Environmental challenges are considerable and include frequently occurring natural disasters which are water related, combined with low disaster preparedness, ineffective water and environmental monitoring and enforcement mechanisms, and insufficient attention to environmentally sound water management practices in all economic sectors.

CSD-13 Policy Actions Implementation



Sector Outcomes



30. Tanzania

Profile	Renewable water/y	m ³ /cap	2,364	Typology	Context (HDI)	—
	Hydropower capability/y	TWh	40		CSD-13 Policy Index	0.6
	Population	'000	38,500			
	Urban population/total	%	24%			
	Human development	index	0.467		Perf. (WSS Access)	—
	GDP (PPP)	\$/cap	744			
	Contribution of agri. to GDP	%	43%			
	Investment climate	index	0.56			
	ODA for water sector/y	\$/cap	1.4			
	Storage capacity surface water	km ³	4.196			
Irrigated area equipped/pot.	%	9%				

Linking Policy & Performance

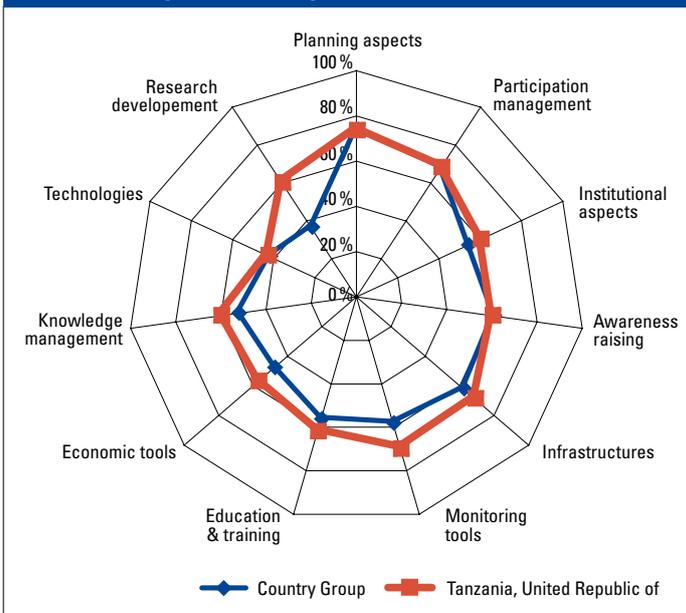
In the context of the MDGs, the country has produced its Development Vision 2025 which is geared towards a National Strategy for Income Generation and Poverty Reduction (NSGPR). Within the NSGPR there are milestones/targets for water supply and sanitation. In order to reach the targets, in 2006 the government unfolded a Water Sector Development Programme (WSDP) which comprises a Rural Water Supply and Sanitation Programme (WSSP) as well as an Urban Water Supply and Sewerage Programme (UWSSP) and Water Resources Management. The thrust of the WSDP is to decentralise the management of water supply and sanitation to autonomous public utilities, local authorities and communities through public and private sector partnership. A critical activity is capacity building for all agencies and the marketing of low cost technologies. Some areas that need special effort include the promotion of health and hygiene and sanitation. Despite the fact that access to sanitation is available to 47 per cent of the population there is still a need for changing behaviour on sanitation as well as sensitising the communities to meeting its costs.

There is a diversity of agencies in the sector (Ministries of Health, Water, Education and Human Settlement, Regulator for urban WSS, CBOs and NGOs, etc.). Putting in place a coordinating mechanism is still a challenge. However, within the WSDP, plans are underway to harmonise the efforts so that coordination becomes effective. This points in the direction of IWRM.

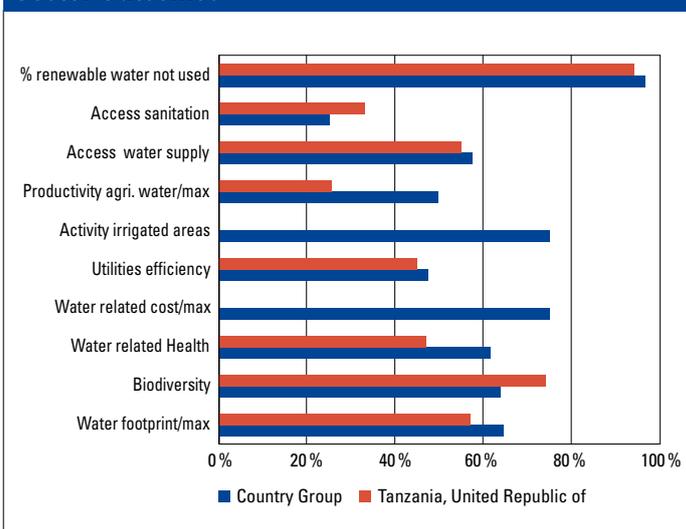
Water supply and sanitation in the rural areas are progressing well, though slowly, mostly because of a lack of human resources. The operators (public, communal and private) are improving their performance in urban settings both at water supply and sanitation. The government is promoting the marketing of sanitation and sewerage management. It is expected that although the country may not reach the MDG targets it will have made considerable progress in the sector.

According to the IPCC scenarios the mean annual temperature increases by 1.0 to 2.7 °C by the 2060s, and 1.5 to 4.5 °C by the 2090s. The models are broadly consistent with projecting increases in annual rainfall by +7 to +14 % (means) and are similar for the whole country.

CSD-13 Policy Actions Implementation



Sector Outcomes



31. Trinidad and Tobago



Profile			Typology	
Renewable water/y	m ³ /cap	2,954	Context (HDI)	+
Hydropower capability/y	TWh		CSD-13 Policy Index	0.4
Population	'000	1,300		
Urban population/total	%	12%	Perf. (WSS Access)	+
Human development	index	0.814		
GDP (PPP)	\$/cap	14,603		
Contribution of agri. to GDP	%	1%		
Investment climate	index	0.71		
ODA for water sector/y	\$/cap	0.42		
Storage capacity surface water	km ³	0.075		
Irrigated area equipped/pot.	%	0%		

Linking Policy & Performance

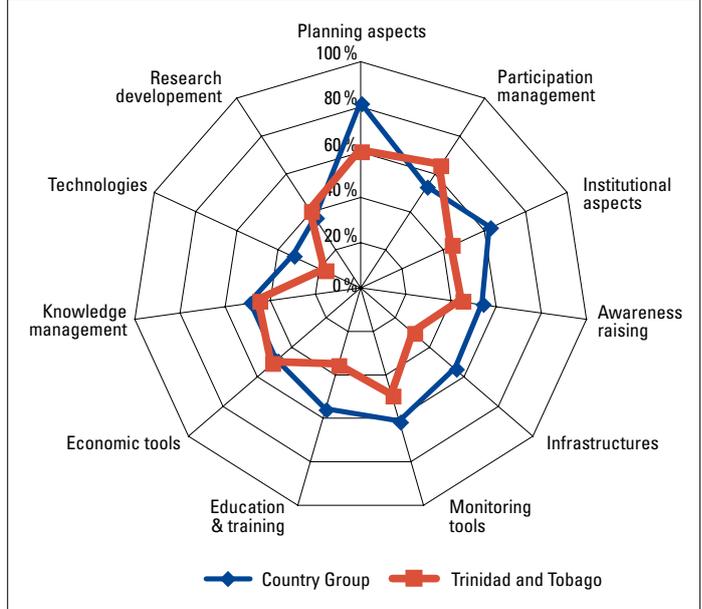
Trinidad and Tobago is fairly well endowed with water resources, but it is faced with a wide range of challenges, such as poor land-use practices and pollution, as well as overuse and misuse of the resources. In order to achieve the objective of Vision 2020 a number of strategies have been put in place to improve the quality and quantity of water resources. The objectives of the Water Resources Management Strategy are:

- the development of a nation-wide strategy, that leads to the sustainable management of water resources in its widest sense; and
- the assessment and delineation of an effective and financially autonomous institutional setting that guarantees optimum management of the water resources sector of Trinidad and Tobago.

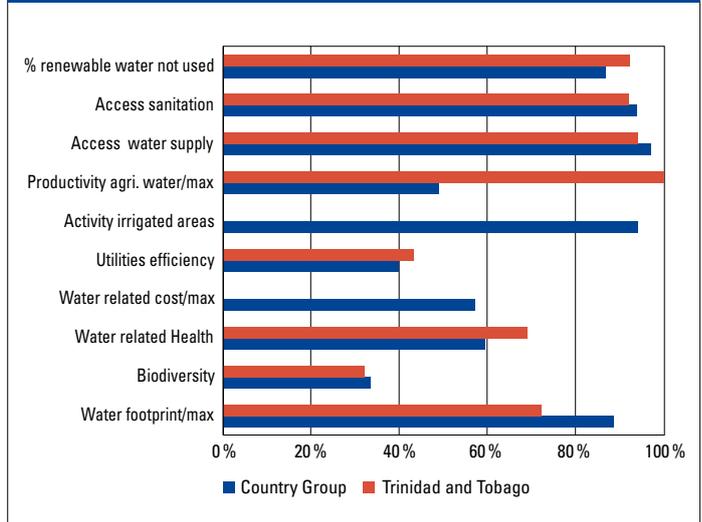
According to the IPCC scenarios, the projected annual temperature increases of 0.7. to 2.6 °C by the 2060s and 1.1 to 4.3 °C by the 2090s. The different models are broadly consistent in indicating decreases in the annual rainfall (-13 to -21 % mean of scenarios). The Caribbean Islands are vulnerable to a sea-level rise of the Atlantic (0.13 to 0.56 m).

Trinidad and Tobago is in a transition phase as it moves towards first world status. As a result, efforts have been made to improve the water and wastewater sectors with the commissioning of a Water and Wastewater Master Plan. The current situation raises questions relating to sanitation which should be addressed by the Master Plan in the coming years.

CSD-13 Policy Actions Implementation



Sector Outcomes



32. Uruguay

	Profile			Typology	Context (HDI)		+
	Renewable water/y	m ³ /cap	42,121		CSD-13 Policy Index	0.5	
	Hydropower capability/y	TWh	10				
	Population	'000	3,300				
	Urban population/total	%	92%		Perf. (WSS Access)	+	
	Human development	index	0.852				
	GDP (PPP)	\$/cap	9,962				
	Contribution of agri. to GDP	%	9%				
	Investment climate	index	0.69				
	ODA for water sector/y	\$/cap	0.09				
Storage capacity surface water	km ³						
Irrigated area equipped/pot.	%	10%					

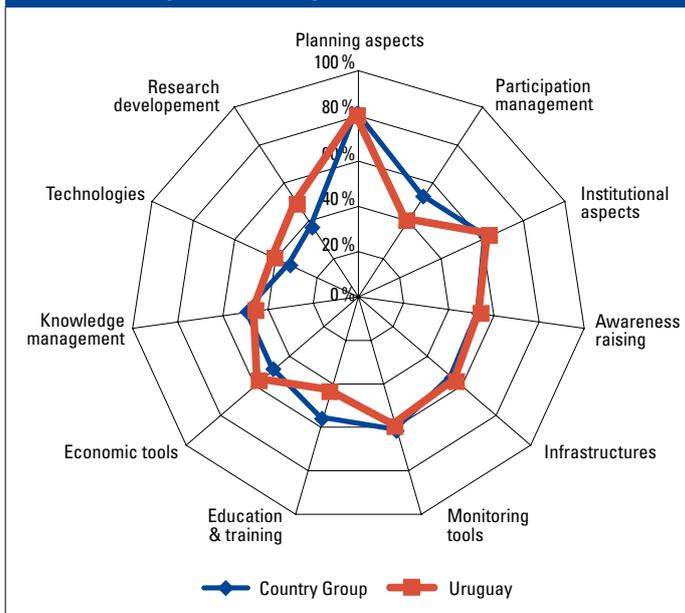
Linking Policy & Performance

The state of the Uruguayan water and sanitation sector is good. There are excellent figures for access to safe water for all, regardless of socioeconomic context. There is a need for a better and more extended sewage infrastructure; already financed projects will assure almost full coverage for the Montevideo metropolitan areas. The state Water and Sanitation Company (OSE) is implementing, in agreement with up-country municipal governments, sewage infrastructure for small villages (less than 2000 inhabitants). Access to water and to basic sanitation can be qualified as very good. The sustainability of the water and sanitation sector seems to be ensured through the role of OSE which is committed to assuring access to drinking water for all regardless of socioeconomic status.

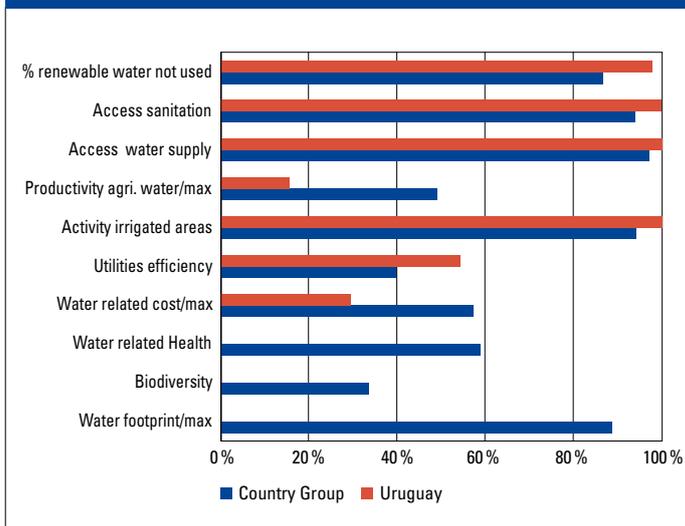
The new Directorate of Water and Sanitation (DINASA), which has been operative for 1 to 2 years, is supposed to assure an IWRM which takes into account ecosystems, catchment areas and water flows. However, the agency is not fully playing this role yet. The debate on IWRM implementation remains open, in particular with regard to the consequences for the environment. Nevertheless, positive examples of customary water use management (good) practices can be noted. For instance, a few Watershed Joint Committees (their number is increasing) and the Directorate of Water Resources (DNH-MTOP) allocate the use of water during droughts based on the Water Code, common sense and participatory processes adapted to each situation.

Some issues which would deserve more attention include hygiene education (even if health indicators are good), participatory processes, gender and youth perspectives, ecological sanitation, environmental issues and

CSD-13 Policy Actions Implementation



Sector Outcomes



33. Viet Nam

	Renewable water/y	m ³ /cap	10,485	Context (HDI)	/
	Hydropower capability/y	TWh	123		
	Population	'000	85,000		
	Urban population/total	%	26%	CSD-13 Policy Index	0.4
	Human development	index	0.733		
	GDP (PPP)	\$/cap	3,071	Typology	/
	Contribution of agri. to GDP	%	20%		
	Investment climate	index	0.50		
	ODA for water sector/y	\$/cap	1.85		
	Storage capacity surface water	km ³			
Irrigated area equipped/pot.	%	50%			

Linking Policy & Performance

The function of water resources management was established by the Law on Water Resources in 1998. Since then, and with the introduction of an IWRM in 2000, the country has made progress in developing regulations, strategies, policies, institutional reforms and action plans. The separation of water resources management from water use management was finally realised in early 2008. Key weak points remain with some mechanisms and management capacity for proper implementation.

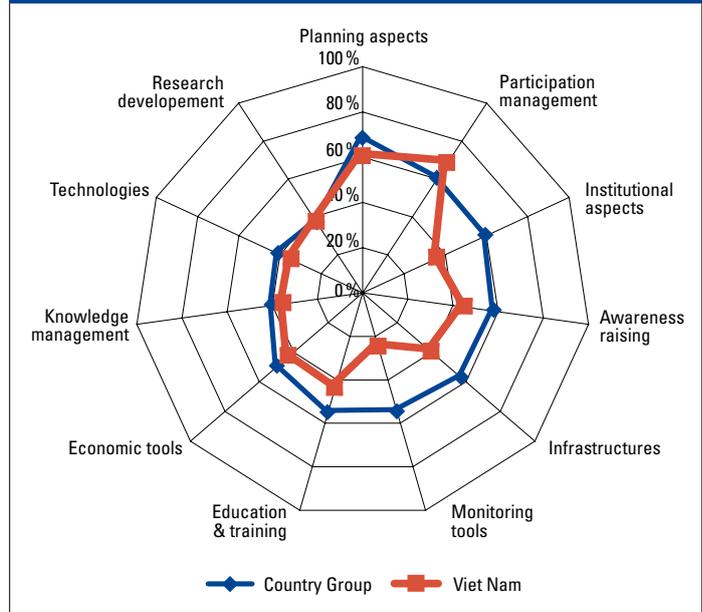
There is a long tradition of development of water resources, notably in irrigation-drainage and flood control. Hydropower and water supply, both urban and rural, are high priorities. The 'user pays' principle is applied extensively for water supply, but reluctantly for irrigation. The protection of water quality and river basin management are still at a preliminary stage. Better sewerage and water pollution treatment calls for the implementation of a 'polluter pays' principle. Sanitation is being actively dealt with by many sectors, but there is a lack of coordination at the national level. The link between sanitation and water resources management is still vague.

Awareness raising, training and policy dialogue activities undertaken by several stakeholders, especially the civil society, have contributed positively to water policy formulation and water sector improvement. Achieving the participation of all stakeholders at the decision-making level is still a remote goal. Donor involvement in water development and management has been strong and effective through ODA support and the introduction and implementation of an IWRM. Coordination between donors interested to water issues has been improved.

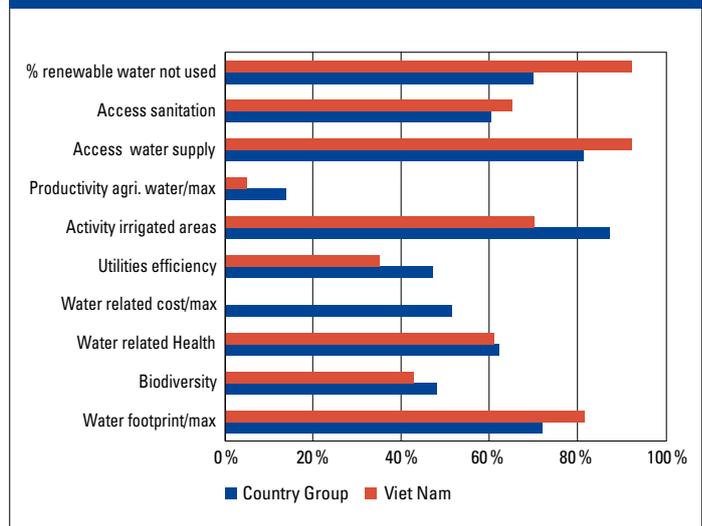
Despite the achievements, water resources, the environment and sanitation continue to be quickly degraded. The insufficiencies include (i) policy actions which have sometimes deviated from the sustainable track at the expense of environmental and social equity benefits, (ii) water sector staff lack knowledge and capacity and (iii) IWRM awareness rising.

The IPCC scenarios project a mean annual temperature increase of 0.8 to 2.7 °C by the 2060s, and 1.4 to 4.2 °C by the 2090s. The projected rate of warming is similar in all regions of Viet Nam. Current models are broadly consistent in projecting increases in annual rainfall, mainly due to the projected increases in August-October rainfall (-1 to +33% by the 2090s). The coastal lowlands will be affected by sea-level rise (0.18-0.56 m by the 2090s).

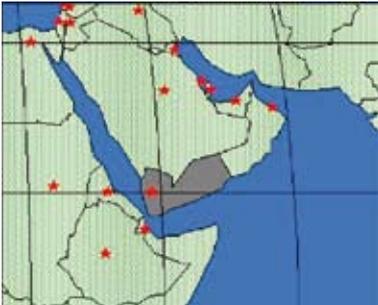
CSD-13 Policy Actions Implementation



Sector Outcomes



34. Yemen

	Profile			Typology	Context (HDI)	/
	Renewable water/y	m ³ /cap	194		CSD-13 Policy Index	0.3
	Hydropower capability/y	TWh				
	Population	'000	21,100		Perf. (WSS Access)	/
	Urban population/total	%	27%			
	Human development	index	0.508			
	GDP (PPP)	\$/cap	930			
	Contribution of agri. to GDP	%	13%			
	Investment climate	index	0.54			
	ODA for water sector/y	\$/cap	2.18			
Storage capacity surface water	km ³	0.18				
Irrigated area equipped/pot.	%					

Linking Policy & Performance

Since the mid-1990s, Yemen has embarked on reforms in the water sector, including the creation of a National Water Resource Authority (NWRA) and the Ministry of Water and Environment (MWE). There has also been a successful reform programme in the urban water and sanitation sub-sector. Additionally, the Agriculture and Fisheries Production Promotional Fund (AFPPF) was established to improve agricultural water use productivity. However, the deteriorating conditions of groundwater aquifers because of overuse continue, and population growth is faster than the rate of building new water supplies. This highlights the importance of concentrating efforts on water demand management to rationalise water use.

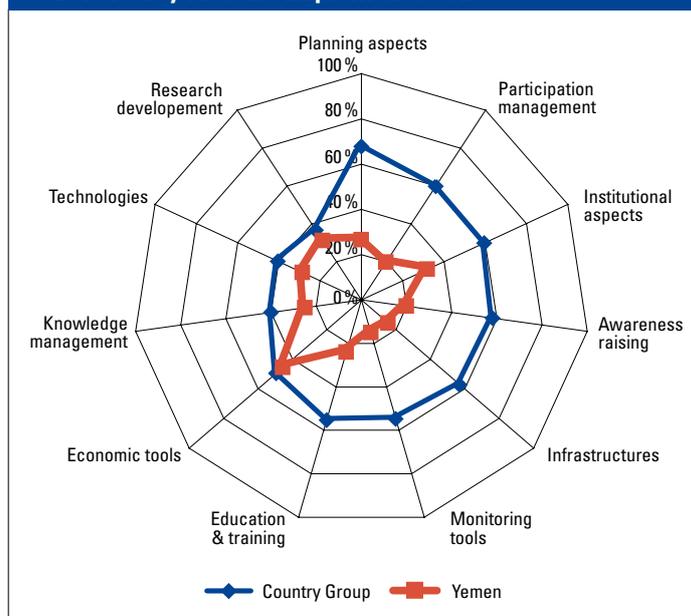
The creation of river basin committees and the formulation of water use plans are underway. A variety of different users associations is being promoted. Several NWRA branches are registering some success with regulation, but progress is very uneven.

Rural water programmes are now being loosely coordinated at central and governorate levels, but overall results are uneven. There is continuing dispersion of effort between agencies (public, private, NGOs, donor supported projects). There is no indication that NGOs are being encouraged to expand their work in rural water, nor is there any channelling of public funds to NGO supported, rural water projects. There appear to have been few moves towards adopting more low cost technology.

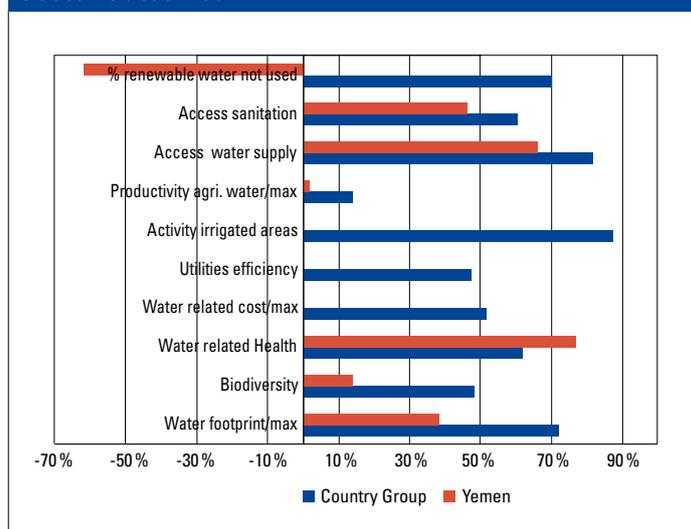
As a result of the concerns with performance in the urban water and sanitation sectors, the Government of Yemen adopted a strategy with the following elements, (i) decentralization through the creation of autonomous local water supply and sanitation corporations (LCs) with greater local focus and independence, (ii) progressive commercialization of the newly created independent LCS, (iii) introduction of specific commercial reforms, such as sustainable tariffs and cost recovery, (iv) progressive corporatisation of the decentralised utilities, (v) establishment of an independent regulatory agency and (vi) introduction of PPP.

According to the IPCC scenarios a mean annual temperature increase of 1.2 to 3.3 °C by the 2060s, and 1.6 to 5.4 °C by the 2090s is projected. The rate of warming is similar in all seasons, but will affect the interior regions of Yemen more rapid, than the coastal areas. Current models are not consistent in projecting either increases or decreases in annual rainfall.

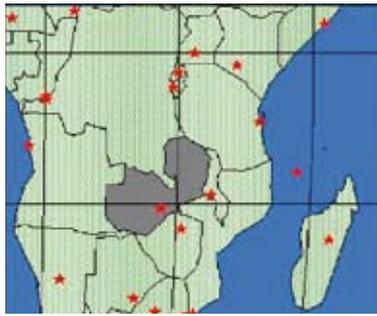
CSD-13 Policy Actions Implementation



Sector Outcomes



35. Zambia



Profile			Typology	
Renewable water/y	m ³ /cap	9,148	Context (HDI)	-
Hydropower capability/y	TWh	30	CSD-13 Policy Index	0.8
Population	'000	11,500		
Urban population/total	%	35%	Perf. (WSS Access)	/
Human development	index	0.434		
GDP (PPP)	\$/cap	1,023		
Contribution of agri. to GDP	%	20%		
Investment climate	index	0.58		
ODA for water sector/y	\$/cap	2.94		
Storage capacity surface water	km ³	106		
Irrigated area equipped/pot.	%	30%		

Linking Policy & Performance

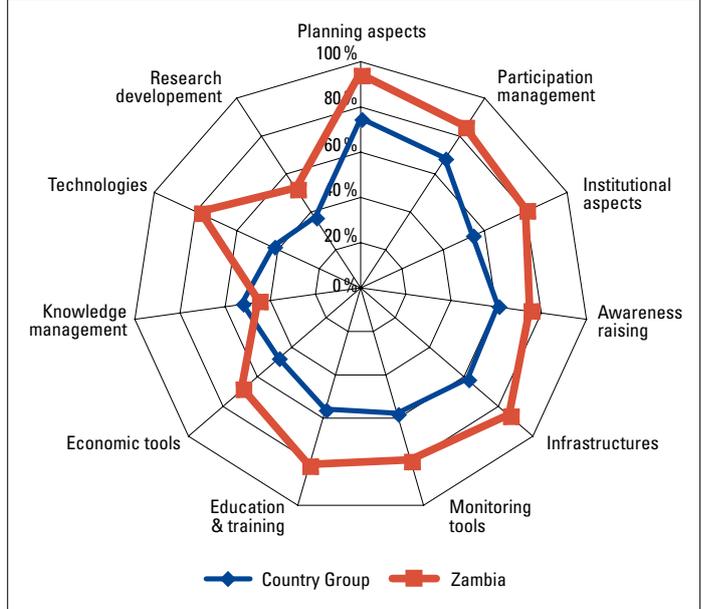
The National Water Policy of 1994 established a legal instrument (the Water Supply and Sanitation Act, 1997) for the water supply and sanitation sub-sector through which ten Commercial Utilities, the Devolution Trust Fund (DTF) and the autonomous water regulator, NWASCO, were established. NWASCO was established with sufficient enforcement power and a strong focus on service provision to the poor. In the water resources management (WRM) sub-sector, the proposed WRM bill focuses on IWRM interventions and hence formation of a Water Authority and management of water by Catchment Councils. The Fifth National Development Plan (FNDP) made water and sanitation and other related areas priority areas. The IWRM/WE Implementation Plan (2008) will for instance be used as a tool, among others, to monitor the implementation of water and sanitation and other related water programmes in the FNDP.

The benchmarking and publication of the performances of the Commercial Utilities has induced healthy competition among them which is enhancing service delivery standards. There are still major challenges in infrastructure investment and the establishment of workable institutional arrangements in some cases. The other major challenge in the sector cited by NWASCO is that sanitation is given very little attention compared to water.

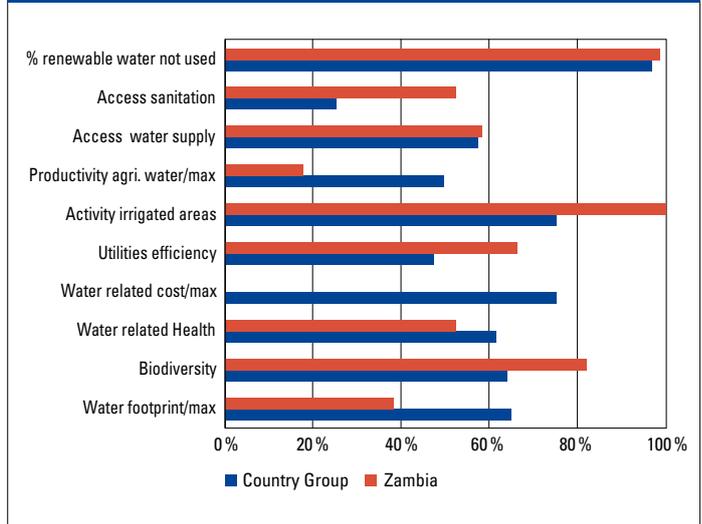
The rural water supply and sanitation sub-sector has continued to lag behind and is facing a number of fundamental issues. These include (i) diffused sector leadership leading to poor coordination of efforts and resources, (ii) an inadequate policy and institutional framework for RWSS, (iii) a lack of comprehensive investment plans, (iv) poor information collection and management systems, (v) poor operation and maintenance of facilities and (vi) low financial sustainability at community level. The National Rural Water Supply and Sanitation Programme (NRWSSP), 2006-2010, was designed to address these issues.

The IPCC scenarios project an increase of the mean annual temperature in Zambia of 1.2 to 3.4°C by the 2060s, and 1.6 to 5.5°C by the 2090s. Projections of the mean annual rainfall do not indicate large changes.

CSD-13 Policy Actions Implementation



Sector Outcomes



5 Brief Analysis

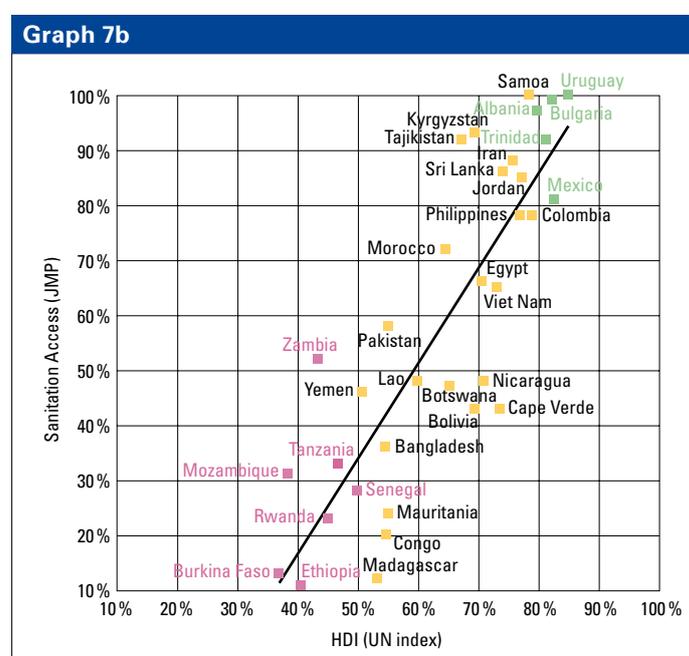
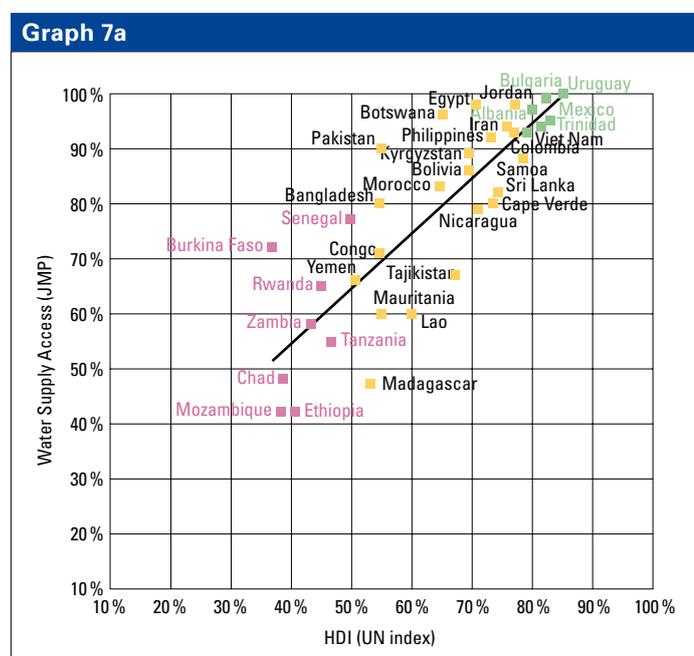


The sample of countries selected for the survey is very diverse and any attempt to draw general conclusions should be made with great caution. Characterising countries with context and outcomes profiles is a relatively simple but crude approach to structuring the discussion of the survey results. In all graphs below, the colours represent the level of HDI (High: green, Medium: yellow, Low: pink)

5.1 Linking context, policy implementation and outcomes

5.1.1 Links between country context and country performance

Graphs 7a and 7b show the level of sector performance (water supply for Graph a, sanitation for Graph b) in relation to HDI.



Comments

There is a significant positive correlation between the water supply and the sanitation performance indexes and the HDI on the 35 countries studied ($R^2=0.71$ for WS and 0.73 for SA). The context, as defined by HDI and the water and sanitation performance seem to evolve together.

Graph 7 (a,b):
Level of sector performance (water supply for Graph a, sanitation for Graph b) in relation to HDI

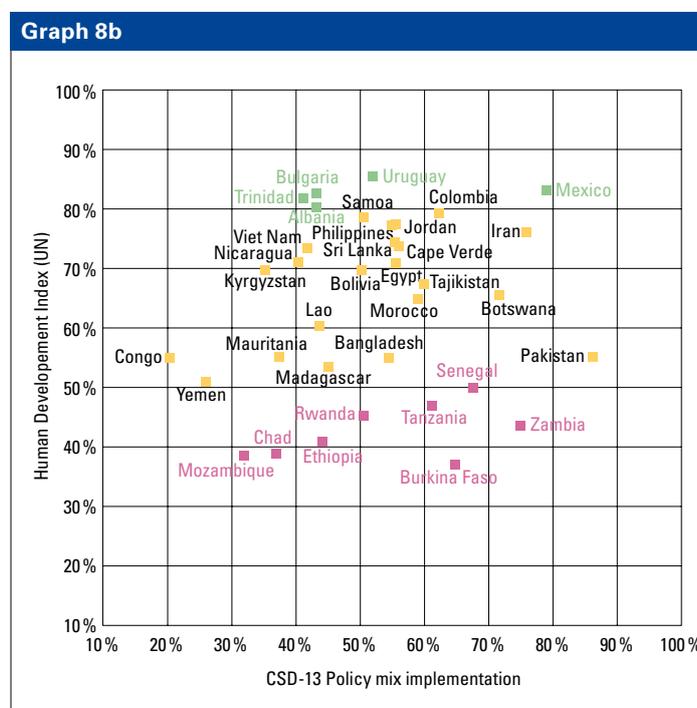
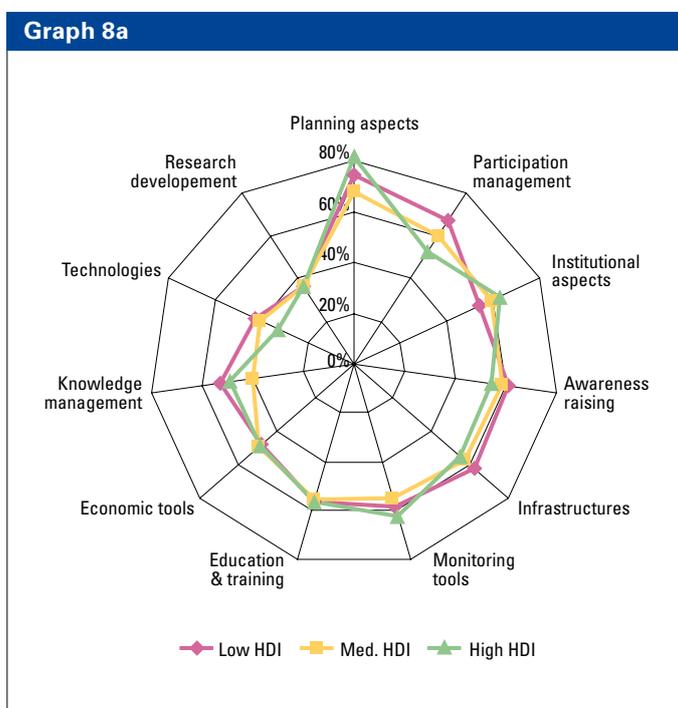
5.1.2 Links between country context and level of implementation of CSD-13 policy actions

The level of implementation of the CSD-13 policy actions by policy category and sector was analyzed for groups of countries with similar context (Table 11).

Assessment:	All countries	Group region	Group context	Group performance	One country
All policy actions			X		
By sector			X		
By category			X		
One policy action					

Table 11:
Scope of analysis
by country context

Graphs 8a and 8c show the level of implementation of policy actions for countries with low, medium and high HDI by category of policy action (Graph 8a) and by sector (Graph 8c). Graph 8b shows the level of implementation in relation to country HDI.



Comments

There is no significant correlation ($r^2=0.01$) between the country context (HDI) and the level of implementation of the policy actions.

Policy Action 12:**Access to low-cost water supply technologies – the case of Uruguay**

In Uruguay, the State Water & Sanitation Company (OSE) has developed its own low-cost water supply technology, to provide acceptable and stable sanitary solutions for small and medium-sized villages. The coverage is nationwide and promoted by OSE.

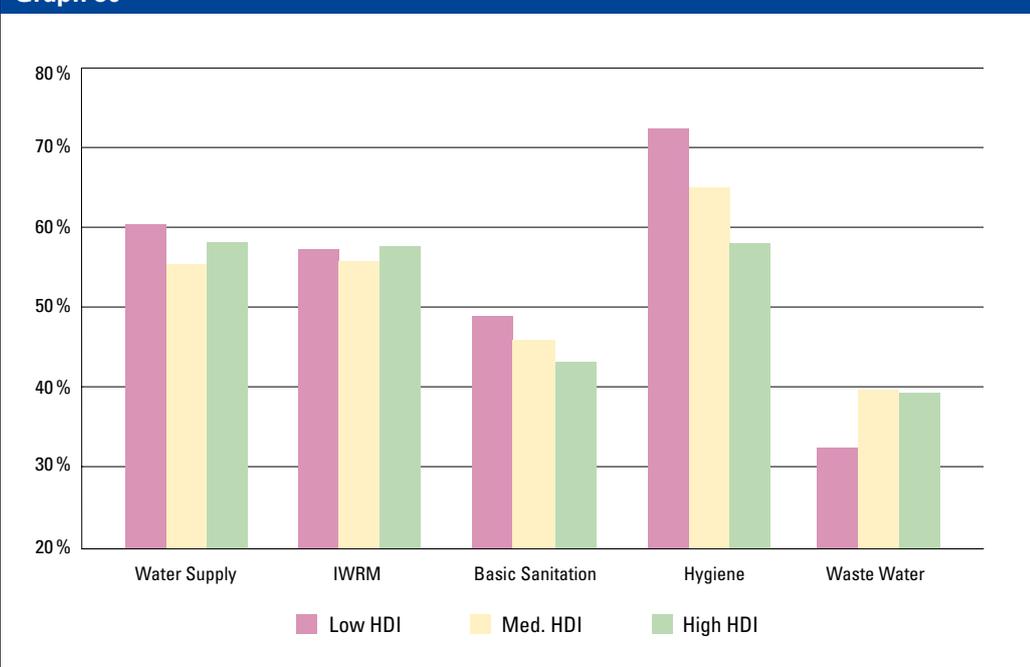
Policy Action 64:**Information on low-cost wastewater treatment – the case of Sri Lanka**

Information packages on locally developed, low-cost water and sanitation technologies are accessible across Sri Lanka. This information, together with a financial subsidy scheme, has resulted in the construction of a large number of toilets and good access to sanitation. The Health Ministry is responsible for preparing and updating the information packages.

Policy Action 30:**Monitoring technologies – the case of Morocco**

Well-equipped measurement stations have been set up to monitor quantity, quality and use of all surface and groundwater resources in Morocco. Donor programmes are helping to improve the efficiency of these stations. Sustainability is ensured within the framework of the basin agencies.

Box 4:
Examples of good implementation

Graph 8c

Graph 8 (a,b,c):
Level of implementation in
relation to country context

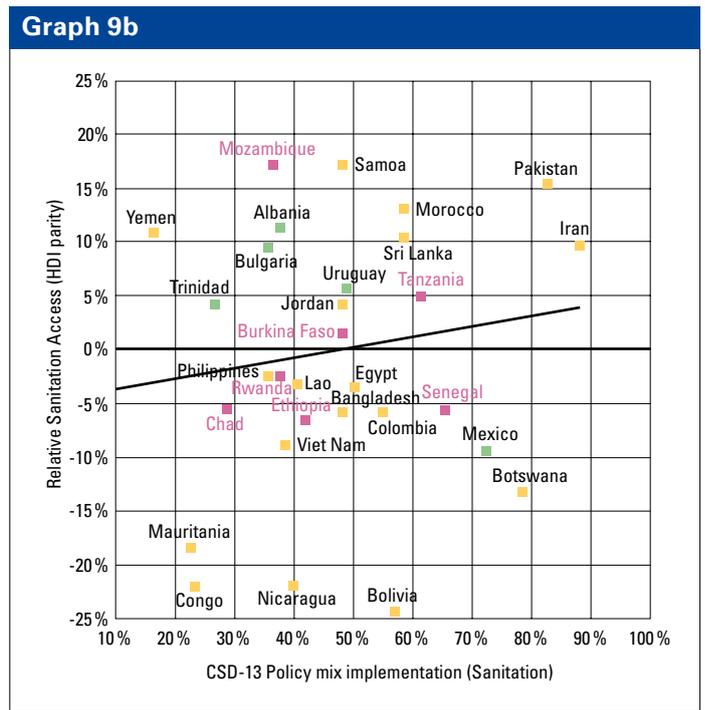
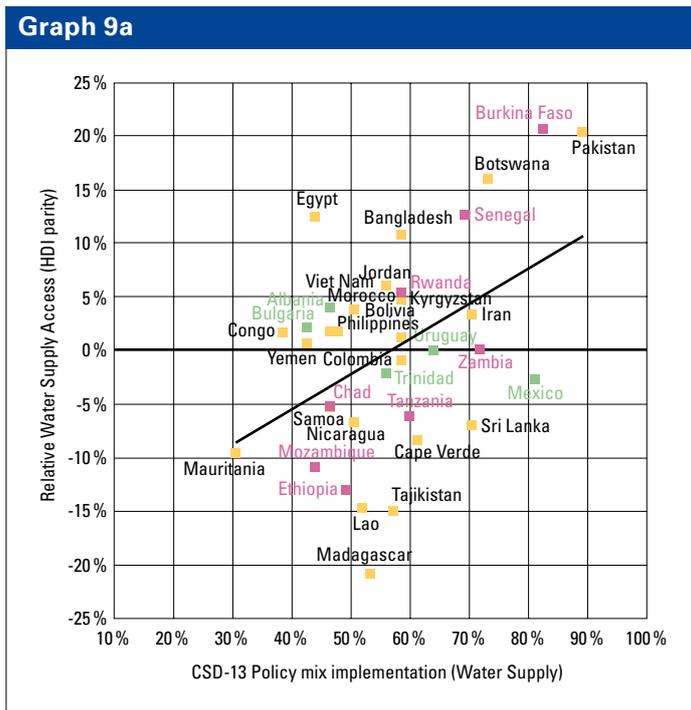
The lack of correlation between the country context and implementation of the CSD-13 policy actions seems to go against the conventional assumption that countries with low HDI lag behind in terms of policies. This may indicate that the level of implementation of the CSD-13 policy actions is more likely to be determined by factors such as political will or unspecified external influences, rather than by the country's context.

The level of implementation of the CSD-13 policy actions seems to be uncorrelated to the level of development as defined by the HDI.

5.1.3 Links between level of implementation of CSD-13 policy actions and country performance

Similar levels of performance may conceal very different efforts depending on the context in which they have been achieved. The concept of “relative performance” is introduced hereafter to address this issue. Relative performance is defined as the real performance corrected from the context contribution to performance. The relative performance index below has been computed by subtracting the linear regression of performance index to HDI ($R^2=0.71$ for WS and 0.73 for SA) from the performance index. The relative performance index allows therefore studying the residual performance of countries at HDI parity.

Graphs 9a and 9b show the relative performance index (water supply for Graph a, sanitation for Graph b) in relation to the level of implementation of CSD-13 policy actions.



Graph 9 (a,b):
Relative performance index and level of implementation of CSD-13 policy actions

Comments

The correlation between the level of implementation of the CSD-13 policy actions relating to water supply and the water supply relative performance index ($r^2=0.2$, not significant) is low. There is no correlation between the level of implementation of the CSD-13 policy actions relating to sanitation and the sanitation relative performance index ($r^2=0.01$).

The lack of correlation regarding sanitation was expected in view of the above-mentioned lack of maturity of the sector. The case of water supply relative performance is further studied on Graph 10. The resulting country mapping allows an analysis in four groups depending on the respective levels of policy implementation and relative performance. The four country groups are explained in Table 12 below.

Second Quadrant

- High level of relative performance
- Low level of policy actions implementation

First Quadrant

- High level of relative performance
- High level of policy actions implementation

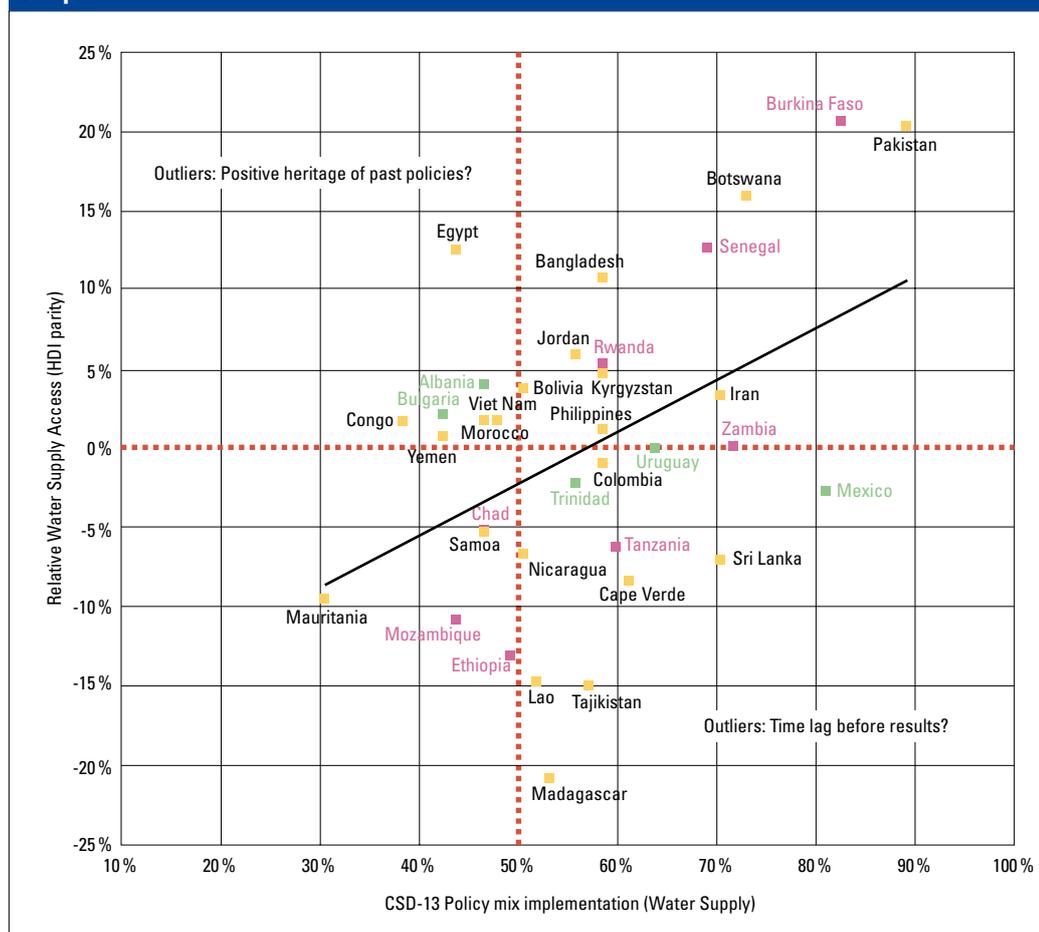
Third Quadrant

- Low level of relative performance
- Low level of policy actions implementation

Fourth Quadrant

- Low level of relative performance
- High level of policy actions implementation

Table 12:
Grouping countries according to policy implementation and relative performance

Graph 10

Graph 10:
Mapping the water supply relative performance of countries

Comments

Most of the countries with substantial relative performance are above the threshold of 50% in terms of policy implementation. Burkina, Faso and Senegal are examples of countries with low HDI (less favourable context) achieving a high relative performance via adequate policy development and implementation (see Atlas).

A few outliers can indeed be observed in Graph 10 above:

- Some countries e.g. Tanzania, Cape Verde have a low relative performance but have a high level of policy implementation. Can performance improvement be expected?
- Some countries e.g. Egypt, Albania, Bulgaria, Egypt have a high relative performance but have a relatively low level of policy implementation. Is deteriorating performance to be feared?

Most of the countries with substantial relative performance are above the threshold of 50% in terms of policy implementation.

The countries mapped in the first quadrant (high relative performance-high level of implementation) give an indication of the level of performance achievable for a given context (HDI). The approaches used by these countries may be worth investigating further and possibly used as benchmarks by countries with similar HDI.

The length of time a policy has been in place must be considered when analyzing the relative performance of each country's implementation of the CSD-13 policy actions. In several countries, the CSD-13 policy actions have been in place for a significant period of time and their performance can, therefore, be more easily assessed. In other countries, significant policy reforms have only been introduced recently and will not have generated significant outcomes yet. Examples of countries which are embarking on new policies (which are not yet fully implemented) could be countries recorded as outliers in Graph 10 above. Tanzania has a heavy reform agenda but is starting from a low performance level. In the case of countries like Albania and Bulgaria, the relatively high level of access to water and sanitation is due to implementation of earlier policies (largely different from the CSD-13 policy actions list).

6 Conclusions



The CSD-13 action list covers a wide spectrum of issues including water supply, sanitation, and IWRM. It represents the broad international consensus on necessary steps to steer the water and sanitation sectors towards achieving internationally agreed goals and targets through embarking on sound country-level policies. Recommendations from various international processes, such as the CSD, have influenced a relatively large portion of the surveyed countries' national water and sanitation policy agenda. This survey presents the level of implementation of the CSD-13 policy actions in the 35 countries studied; not whether these policies were implemented as a result of the CSD-13 process per se.

Recommendations from various international processes, such as the CSD, have influenced a relatively large portion of the surveyed countries' national water and sanitation policy agenda.

The main results of the survey on the level of implementation of CSD-13 policy actions in the 35 countries can be summarised as follows:

- The implementation of policies on sanitation lags behind that of policies on water supply and water resources management.
- IWRM and water supply seem to generate similar levels of interest in terms of policy formulation and implementation.
- The variability in levels of implementation is wider for sanitation than for water supply and water resources management.
- There is more emphasis on the early stages of reform (planning, capacity building) than on the implementation stages.
- Research and development and technologies do not receive as much attention as other areas.
- Implementation of the policy actions is not considered sustainable in the long run (poor level of institutionalization and/or financing) in about half of the cases (countries and policy actions).
- The country context profile (defined by HDI) does not appear to be a significant determinant of the level of policy implementation.
- There is a small correlation between the level of implementation of the CSD-13 policy actions and the performance level achieved (for the water supply block).

Some conclusions relative to the implementation of the CSD-13 policy actions derived from these results are:

- The apparent lack of maturity of the sanitation sector calls for renewed efforts in this sector.
- The drivers for policy implementation are difficult to identify. They do not lie within the country context profile as defined by common context indicators such as HDI. Other important factors, such as political will, need to be looked at closely.
- The linkages between policy implementation and performance have to be analysed within a dynamic perspective. The linkages between policy implementation and performance need to be viewed within a dynamic perspective, taking into account the time dimension and the maturity of the sector.
- The lack of institutional and financial sustainability of policy actions poses a serious threat to their success. According to the survey results, about half of the efforts undertaken in terms of policy formulation and implementation are in risk of failure for this reason.

Some conclusions drawn from the methodology used to conduct and analyze the survey are:

- The methodology used for analysis builds on a conceptual framework that highlights the links among country context, policies implemented in a given sector, and the respective outcomes.
- Further effort is needed to define a robust analytical framework of the triangle context-policy-outcomes (including selecting indicators; multiple variable analysis) and to consider the time dimension in policy cycles.
- The methodology used to conduct the survey allows the quantification of the level of policy action implementation. This quantification is, however, based on expert assessments. Further work is needed to decrease the dependence on the quality and integrity of subjective assessments made by different individuals.

Many of the findings summarised above may appear predictable. Nevertheless, the results of the survey provide concrete data as a basis for discussion and analysis. Possible follow ups triggered by the analysis could be:

For countries covered in the report:

- Analyse the results and identify areas where increased effort is needed to accelerate implementation.
- Embark on multi-stakeholder forums to gather views of NGOs, private sector, and civil society on main areas of effort.

For countries not covered in the report:

- Analyse country specific water sector performance using the approach developed in this study.
- Invite stakeholders such as NGOs, private sector and civil society to embark on a discussion on ways to improve the water governance in all relevant areas.

Finally and perhaps most critically, a concerted effort to improve the methodology proposed in this report is an important step towards a more coherent global monitoring of the relevance of policies for achieving improvements in the national water and sanitation sectors.

Annex 1: List of CSD-13 policy actions on water and sanitation¹⁵



List of CSD-13 policy actions on water and sanitation¹⁵

Sector Blocks	Policy options
Water/Access to basic water services	a, b, c
Water/Integrated water resources management (IWRM)	d, e, f, g, h
Sanitation/	i
Sanitation/Access to basic sanitation	j, k, l
Sanitation/Sanitation and hygiene education	m
Sanitation/Wastewater collection, treatment and reuse	n, o

Policy options

- (a) Sustain and accelerate progress toward the water access goal, supported by increased resources from all sources, including ODA, in response to countries' needs.
- (b) Develop and strengthen human and institutional capacities for effective water management and service delivery.
- (c) Develop and transfer low-cost technologies for safe water supply and treatment, in accordance with countries' needs.
- (d) Recognizing that the 2005 target on IWRM may not be met by all countries, accelerate the provision of technical and financial assistance to countries in preparing nationally-owned IWRM and water-efficiency plans tailored to country-specific needs, paying particular attention to economic development, social and environmental needs, supporting implementation through learning-by-doing.
- (e) Support African initiatives in the area of water, within the framework of AMCOW, with particular reference to basin-wide initiatives in Africa.
- (f) Enhance cooperation among riparian States through relevant arrangements and/or mechanisms with the consent of the States concerned, taking into account the interests of the riparian States.
- (g) Develop and strengthen national monitoring systems on the quantity, quality and use of surface and groundwater resources at national and local levels, and for measuring progress towards internationally agreed goals and targets, as appropriate, as well as for assessing the impact of climate variability and change on water resources.
- (h) Support more effective water demand and water resource management across all sectors, especially in the agricultural sector.
- (i) Provide adequate sanitation, recognizing the inter-linkages among water, sanitation, hygiene and health, including water-borne disease vectors, as well as the positive impacts of access to sanitation on poverty reduction, privacy, dignity, security and education.
- (j) Sustain and accelerate progress towards the JPOI sanitation target, supported by increased resources from all sources, including ODA, in response to countries' needs.
- (k) Ensure effective capacity for building, operating and maintaining sanitation and sewerage systems.
- (l) Ensure access to culturally appropriate, low-cost and environmentally sound sanitation technologies.
- (m) Support countries in promoting sanitation and hygiene education and awareness raising.
- (n) Expand and improve wastewater treatment and reuse.
- (o) Support regional and sub-regional arrangements, to protect water resources from pollution, addressing the specific needs of arid, semi-arid and coastal countries.

For each policy option detailed policy actions were set out, which were the focus of the survey (code 1-65 for “national level”, S1-7 for “supra-national level”). The table below shows the list of policy actions with its related survey code (NB), policy option (O) and policy category (C).

NB	O	C	Policy actions
1	(a)	11	(i) Prioritizing water in national development plans, sustainable development strategies and PRSPs, and facilitating access to water for all.
2	(a)	2	(ii) Strengthening capacities of national and local authorities in resource allocation and management, quality control, development and implementation of water supply projects, and monitoring of service provision.
3	(a)	7	(iii) Promoting support for water infrastructure planning and development.
4	(a)	3	(iv) Involving all stakeholders, particularly women and youth, in the planning and management of water services and, as appropriate, decision-making processes.
5	(a)	9	(v) Instituting economic incentives to encourage the participation of small-scale water service providers.
6	(a)	9	(vi) Employing the full range of policy instruments, including regulation, voluntary measures, market and information-based tools and cost recovery of water services that contribute to the sustainability of services provision, without cost recovery objectives becoming a barrier to access to safe water by poor people.
7	(a)	9	(vii) Targeting subsidies for the poor, including connection costs.
8	(b)	2	(i) Building capacities of local communities in operation and maintenance of water systems, and training educators, managers and technicians in different aspects of water management.
9	(b)	4	(ii) Tapping local and indigenous knowledge in project development and implementation.
10	(b)	2	(iii) Promoting and strengthening commercial capacities of local suppliers.
11	(b)	2	(iv) Improving monitoring and analytical capabilities of water information management agencies.
12	(c)	6	(i) Promoting access to appropriate low-cost and environmentally sustainable water use and supply technologies through North-South and South-South cooperation and partnerships.
13	(c)	6	(ii) Developing capacities in the area of water desalination, treatment of contaminants, rainwater harvesting and water efficiency through technology transfer and sharing of best practices.
14	(c)	5	(iii) Investing in research and development projects.
15	(c)	5	(iv) Addressing the special needs of countries with arid and semi-arid areas due to water scarcity.
16	(d)	10	(i) Improving water governance through strengthening of institutional and regulatory reforms, capacity development and innovation.
17	(d)	2	(ii) Providing technical and management support to local authorities and community based organizations, taking into account research, traditional knowledge and best practices, to improve water resources management within national policy frameworks.
S1	(d)		(iii) Providing additional resources, as appropriate, for regional and sub-regional initiatives, such as the African Water Facility.
18	(d)	3	(iv) Encouraging effective coordination among all stakeholders in water-related decision making.
19	(d)	7	(v) Enhancing the sustainability of ecosystems that provide essential resources and services for human well being and economic activity in water-related decision making.
20	(d)	10	(vi) Facilitating information exchange and knowledge sharing, including indigenous and local knowledge.
21	(d)	4	(vii) Strengthening the prevention of pollution resulting from wastewater, solid waste, industrial and agricultural activities.
22	(d)	10	(viii) Developing preventive and preparedness measures, as well as risk mitigation and disaster reduction, including early warning systems.
23	(d)	11	(ix) Protecting and rehabilitating catchments areas for regulating water flows and improving water quality, taking into account the critical role of ecosystems.
24	(d)	1	(x) Raising awareness of the importance of water use efficiency and conservation.

NB	O	C	Policy actions
25	(d)	3	(xi) Involving all stakeholders, including women, youth and local communities, in integrated planning and management of land and water resources.
S2	(d)		(xii) Encouraging, where appropriate and within their mandates, the use of MEAs to leverage additional resources for IWRM.
26	(d)	1	(xiii) Promoting higher priority and greater action on water quality.
S3	(e)		Not specified, see policy option
S4	(f)		Not specified, see policy option
27	(g)	8	(i) Establishing and managing water information systems.
28	(g)	8	(ii) Installing networks for monitoring water resources and quality.
29	(g)	8	(iii) Standardizing methodologies and developing monitoring indicators.
30	(g)	8	(iv) Transferring monitoring technologies adaptable to local conditions.
31	(g)	4	(v) Disseminating information to relevant stakeholders.
32	(h)	6	(i) Using efficient irrigation and rain water harvesting technologies.
33	(h)	7	(ii) Implementing irrigation projects with a focus on the poor, particularly in Africa.
34	(h)	2	(iii) Training farmers and water user associations in efficient water use and sustainable agricultural land management.
35	(h)	6	(iv) Promoting the use of wastewater for certain irrigation purposes, subject to health and environmental standards.
36	(h)	6	(v) Increasing the efficiency, and where appropriate, the use of rain-fed agriculture.
37	(i)	7	Not specified, see policy option
38	(j)	10	(i) Establishing an institutional home for sanitation.
39	(j)	11	(i) Prioritizing sanitation in national development plans, sustainable development strategies and PRSPs, and incorporating sanitation in integrated water resources management plans.
40	(j)	10	(ii) Allocating a specific and adequately resourced budget for sanitation.
41	(j)	7	(iii) Prioritizing investments to areas of greatest need and greatest impact, notably in schools, work places and health centres.
42	(j)	9	(iv) Employing cost recovery, where appropriate, to contribute to the sustainability of services, with targeted subsidies for the poor.
44	(j)	9	(v) Instituting economic incentives to encourage the participation of small-scale sanitation and hygiene service providers.
45	(j)	5	(vi) Conducting assessment of the health impacts of the lack of sanitation at community level.
S5	(j)		(vii) Supporting existing regional and inter-regional initiatives such as the Global WASH Programme for water and sanitation.
46	(j)	7	(viii) Promoting and supporting on-site sanitation infrastructure, especially in rural areas.
43	(j)	7	(ix) Supporting the provision and maintenance of sanitation services to refugees and refugee host countries.
47	(k)	2	(i) Providing managerial and technical training to public utilities, community-based organizations and small-scale providers for development, operation and maintenance of sanitation systems.
48	(k)	3	(ii) Strengthening the role of women in planning, decision-making and management of sanitation systems.
49	(k)	4	(iii) Tapping local and indigenous knowledge in project development and implementation.
50	(k)	2	(iv) Promoting and strengthening commercial capacities of local suppliers in establishing sustainable sanitation delivery models.
51	(k)	2	(v) Improving monitoring and analytical capabilities of information management agencies.
52	(l)	5	(i) Promoting research, development and dissemination of information on low-cost sanitation options.
53	(l)	5	(ii) Investing in research and development projects including in applications of indigenous technologies and ecological sanitation.
54	(l)	6	(iii) Providing technology transfer for sanitation, wastewater treatment, reuse and residuals management.

NB	O	C	Policy actions
55	(l)	6	(iv) Strengthening North-South and South-South cooperation in developing and applying sanitation technology.
56	(m)	1	(i) Promoting gender-sensitive sanitation and hygiene education and awareness, including through social marketing and public information campaigns such as Water, Sanitation and Hygiene for All (WASH), and improve understanding of the linkages among sanitation, hygiene and health.
57	(m)	1	(ii) With an emphasis on children and youth, incorporating gender-sensitive hygiene education in school curricula.
58	(m)	7	(ii) With an emphasis on children and youth, ensuring the provision of separate sanitation facilities for boys and girls in all schools.
59	(m)	3	(iii) Promoting the involvement of women, youth and community groups in sanitation and hygiene education programmes.
60	(n)	7	(i) Financial and technical assistance to national and local authorities in deploying cost effective and environmentally sound sewerage and wastewater treatment systems, including decentralized urban systems.
61	(n)	9	(ii) Meeting operation and maintenance costs through an appropriate mix of measures including user charges, wastewater reuse and budgetary allocations.
62	(n)	9	(iii) Establishing sustainable business models and financing mechanisms linked to capital markets such as revolving funds for sewerage services.
63	(n)	2	(iv) Education and training in building, operating and maintaining wastewater collection and treatment systems.
64	(n)	5	(v) Research, development and dissemination of information on low-cost and efficient wastewater treatment technologies, including on water quality and reuse.
65	(n)	5	(vi) Dissemination of information and guidelines on surface and ground water quality and the safe reuse of treated wastewater.
S6	(n)		(vii) Establishing regional project development facilities to provide seed capital, training and technical assistance.
S7	(o)		Not specified, see policy option

15 Full document available at: http://www.un.org/esa/sustdev/documents/docs_csd13.htm

Annex 2: Survey methodology



Survey questionnaire

National experts¹⁶ were guided by a survey manual and recorded country data on an Excel proforma. An “operational” interpretation of the CSD-13 action list was also provided (shown below).

Policy Action 1:

<-----CSD Action List, original formulation----->			
NB	Thematic Block	Policy option	Policy action
1	A: Access to basic water services	(a) Sustain and accelerate progress toward the water access goal, supported by increased resources from all sources, including ODA, in response to countries' needs, with a focus on the following actions:	(i) Prioritizing water in national development plans, sustainable development strategies and PRSPs and facilitating access to water for all;

Interpretation of the Policy Action 1:

<----- What is surveyed----->			
Exemplary Output	on / for	Management functions targeted	Actors-Institutions targeted
National development plans, sustainable development strategies and PRSPs chapters	on / for	Linking water management to the overall development framework	targeting Relevant ministries

Each policy action was assessed by scoring five attributes using the questions in the table below. Scores for each attribute were supported by written justification or evidence (proof, reference). If the most appropriate answer to the questions was “Yes”, the score was “1”, if the most appropriate answer was “No”, the score was “0”. The level of implementation of a given policy action was thus given a score from 0 to 5.

Attributes assessed	Questions used to assess the attributes for each policy action
1. Existence	Does the expected exemplary output exist?
2. Quality	Is the surveyed exemplary output of adequate quality?
3. Range of target area	Is the surveyed exemplary output meant to impact most of the expected targeted actors and/or targeted management functions?
4. Scale of implementation	Is the surveyed exemplary output a large scale implementation?
5. Sustainability	Is the surveyed exemplary output institutionalised and financed over a reasonable timeframe?

The information collected was recorded on an Excel form, as illustrated below.

Limitations

The limitations of the survey stem mostly from the subjective scoring system. The national experts were expected to make professional judgments and back them up with explicit evidence.

- The types of information collected varied. In some countries most information was collected through interviews rather than from other sources of information (documents).

K	L	M	N	O
<-----Qualified assessment of attributes----->				
<i>Attribute. 1 existence (statement)</i>	<i>Attribute. 2 substance (statement)</i>	<i>Attribute. 3 range (statement)</i>	<i>Attribute. 4 scale (statement)</i>	<i>Attribute. 5 sustainability (statement)</i>
_The national development strategy of country X deals extensively with water issues (ref.); _The PRSP highlights water supply as 3rd priority and environmental protection (incl. water res.) as 5th priority (ref.); ...etc	_The water issues are properly singled out in the national planning documents (ref.); _ the water resources issues are treated separately from water supply and sanitation issues (ref.);... etc	_The planning documents fall short of providing adequate mechanisms for integrating the ministry of agriculture (ref.); ... etc	_The planning documents are part of the national planning system and cover therefore the whole country (ref.);... etc	_The financing mechanisms relating to the implementation of the water chapters of the plans under review are not detailed enough and do not appear robust enough, particularly for rural areas (ref.); ... etc

- The diverse backgrounds and experiences of national experts limit the scope of the cross country comparisons.
- Disentangling the assessment along five dimensions required substantial analysis. Differentiating “existence” and “quality” proved difficult.
- An understanding of the policy environment was crucial: some CSD-13 policy action statements are complex and target several areas. Understanding the full breadth of the “exemplary outputs and target areas” was, therefore, a challenge.

National experts made preliminary maps of the key actors in the water and sanitation sectors to mitigate the risk of overlooking important information. The project team reviewed questionnaires and interacted with national experts to minimise differences in interpreting policy actions and related attributes. Nevertheless, the assessments are subjective and the reader should exercise appropriate caution when considering the findings.

16 Experienced national water professionals identified mostly through the UN, GWP and SIWI networks.

Annex 3: Context and outcomes indicators



Preliminary remarks

The data set collected for this project is among the best available internationally; nevertheless, it should be used with care¹⁷. Disclaimers and warnings posted by the institutions responsible for synthesising data are not reproduced here. The data made available by these institutions often comes from a wide variety of sources and is collected using a wide variety of approaches, sometimes derived from other data. The data may also come from different years, making direct comparisons difficult.

Introduction to the concepts of context and outcomes

“Context” refers to the overall state of a country in terms of human, natural and economic resources available at a given point in time. The context is built on physical parameters (e.g. hydrology or topography), on external factors (e.g. foreign assistance) and for a large part on the broad “outcomes” generated by the socioeconomic circumstances of the country considered (e.g. education level, GDP, major investments). These elements constitute the “context” within which policy decisions will be elaborated and implemented at a point in time.

The broad socioeconomic “outcomes” are determined by the outcomes generated by the various sectors. The sector outcomes are themselves the results of policy decisions made and policies implemented previously. There is therefore a complex and reflexive interplay between the context and the outcomes of the various sectors in a given country (Figure 1).

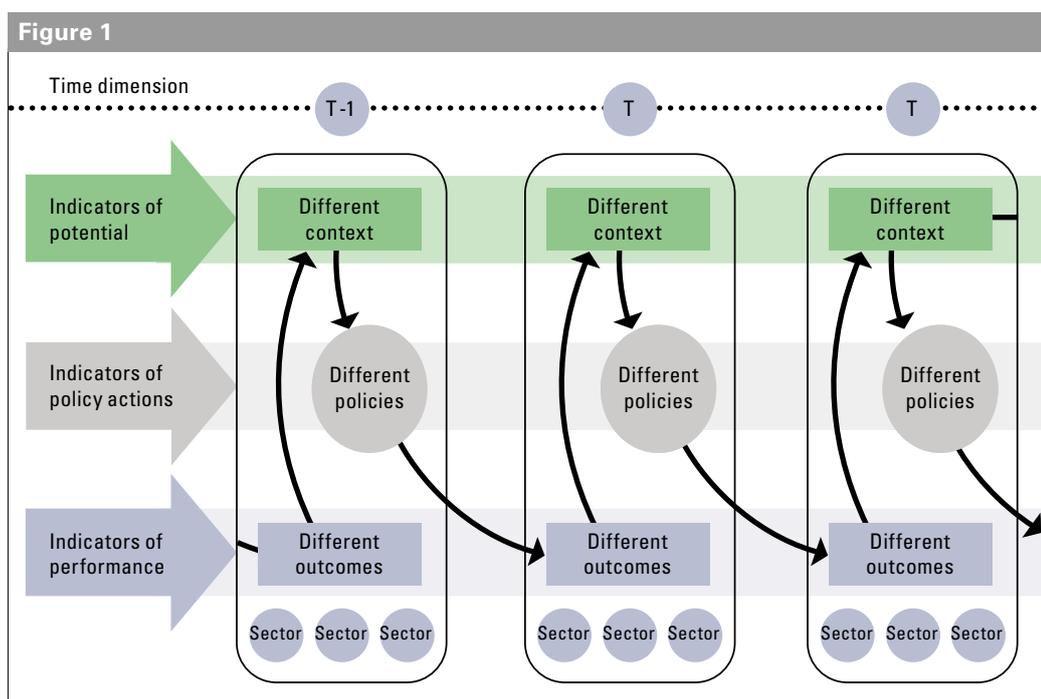


Figure 1: Context, policies and outcomes; the time dimension

Indicators for analyzing the context of a country

There is no universally agreed set of context indicators for analyzing the context of countries from a water perspective. For this survey, eleven indicators were chosen to describe the general water-related “context” of a country in terms of human, natural and economic resources (see below). The Atlas documents these indicators for all countries sampled.

Table 1		
Context indicators	Unit	Source
1. Renewable water resources/year	m ³ /cap	FAO-aquastat (latest available)
2. Hydropower capability/y	TWh	World Council Energy (2007)
3. Population	000	Human Development Report (UN 2008)
4. Urban population/total	%	Human Development Report (UN 2008)
5. Human development	index	Human Development Report (UN 2008)
6. GDP ¹⁸ (PPP)	\$/cap	Human Development Report (UN 2008)
7. Contribution of agricultural sector to GDP	%	CIA, countries of the world survey (2007)
8. Investment climate	index	Heritage Foundation (2007)
9. Official Development Assistance for water sector/year	\$/cap	Pacific Institute (latest available)
10. Storage capacity surface water	km ³	FAO-Aquastat (latest available)
11. Irrigated area equipped/potential	%	FAO-Aquastat (latest available)

Indicators	Simple Definitions
1.	Total resources that are offered by the average annual natural inflow and runoff that feed each hydrosystem (catchment area or aquifer).
2.	Technically exploitable capability, which is the amount of the gross theoretical capability (annual energy potentially available in the country if all natural flows were turbinized with 100% efficiency from the machinery) that can be exploited within the limits of current technology
3.	Total population of a country
4.	Percentage of population living in urban areas
5.	A measure of human development using three equally weighted dimensions of human development – life expectancy at birth, adult literacy and mean years of schooling and income (purchasing power per capita in dollars)
6.	A country's Gross Domestic Product (GDP) is a measure of the total flow of goods and services produced over a specified time period, usually a year. The word 'gross' means that no deduction for the value of expenditure on capital goods for replacement purposes is made. The word 'domestic' means that income arising from investment and possessions owned abroad is not included; and this distinguishes Gross Domestic Product (GDP) from Gross National Product (GNP). Purchasing Power Parity: a rate of exchange that accounts for prices differences across countries allowing comparisons of outputs and incomes between countries.
7.	Part of goods and services produced within the agricultural sector
8.	Index based on assessments of business, trade, fiscal, monetary, investment, financial, government size, property rights, corruption and labour policies.
9.	The term "ODA for Water" encompasses official development assistance for a broad range of water-related projects, including water supply and sanitation, but excluding amounts committed for large water-related infrastructures such as hydropower schemes.
10.	Total cumulative storage capacity of all large dams
11.	Area equipped for irrigation as percentage of irrigation potential

Table 1:
Context indicators

One indicator was used to group countries with similar context: the Human Development Index (UN). This crude analysis is not meant to suggest that human or economic capital can simply substitute for natural resources but to allow reasonable analysis within a group of broadly similar countries. In order to insist on the multi dimensional aspect of a country context and highlight the diversity of country situations a second indicator is used in the graphs below: the renewable water resource per capita¹⁹. It should, however, be clear that for this study, the context of a country is identified with the human development only.

The grouping of countries by the two indicators is shown below.

HDI	Level	Group	Water Availability	Level	Group
HDI < 0.5	Low	L	WAv < 1000	Scarcity	L-
0.5 <= HDI < 0.8	Medium	M	1000 <= WAv < 2500	Stress	L
0.8 <= HDI	High	H	2500 <= WAv < 5000	Medium	M
			5000 <= WAv	Abundant	H

Table 2: Indicators to group countries with similar context, HDI and water availability

Water Availability	Low HDI	Medium HDI	High HDI
Abundant	Mozambique, Zambia	Bangladesh, Bolivia, Botswana, Colombia, Congo, Kyrgyzstan, Lao, Madagascar, Nicaragua, Philippines, Tajikistan, Viet Nam	Albania, Uruguay
Medium	Chad, Senegal	Mauritania, Sri Lanka	Bulgaria, Mexico, Trinidad
Stress	Burkina Faso, Ethiopia, Tanzania	Egypt, Iran, Pakistan	
Scarcity	Rwanda	Cape Verde, Jordan, Morocco, Samoa, Yemen	

Table 3: Groups of countries according to HDI (water availability as illustration only)

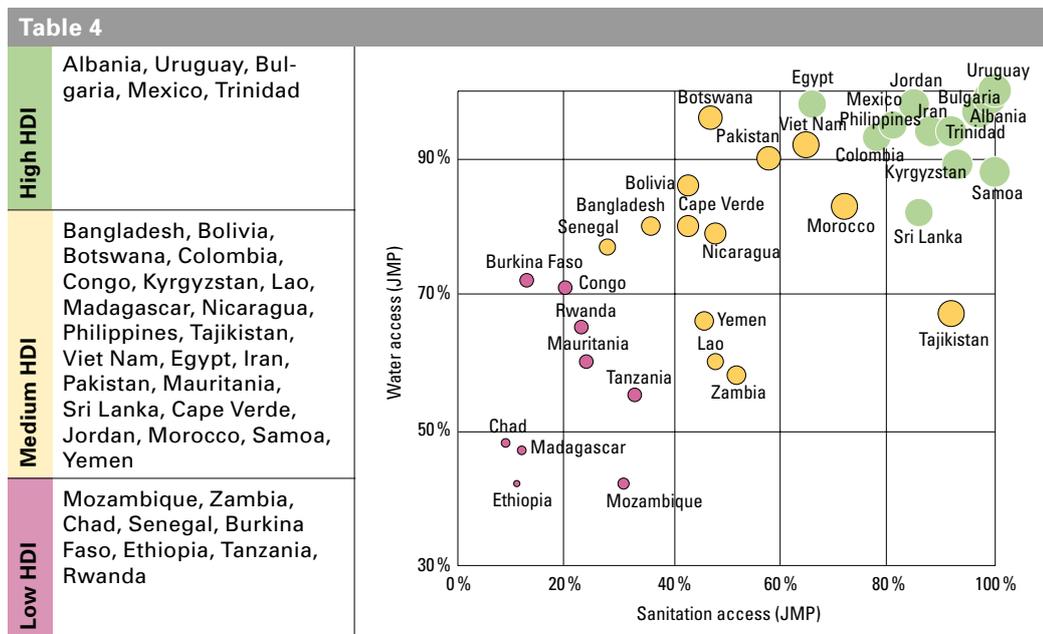


Table 4: Classification of countries using HDI indicator

The amount of renewable water per capita is reflected both on the y axis and by the size of the bubbles (the 6 countries with more than 20,000 m³ are not included in the graph). The colour of the bubbles reflects the three groups (Low HDI=>small size, pink; Medium HDI=>medium size, yellow; High HDI=>big size, green)

The group of medium HDI countries is clearly not homogeneous. However, because of the limited size of the sample, and in the benefit of simplicity, it has been kept as one group.

Indicators for analysing the sector outcomes of a country

Ten indicators were chosen to describe the overall outcomes of the water and sanitation sectors of a country. As in the case of indicators for context, and perhaps even more so, there is no universally agreed set of outcomes indicators. The indicators (definitions and sources below) were chosen to capture efficiency (1, 5, 6), effectiveness (2, 3, 4, 8) and impact (7, 9, 10) with regard to broad sustainable development objectives, and combine social, economic and environmental dimensions. Most indicators are proxy.

Table 5

Outcomes indicators	Unit	Source
% renewable water not used	%	Pacific Institute (latest available)
Access to sanitation	%	Joint Monitoring Programme, UNESCO-WHO (2008 report; data from 2006)
Access to water supply	%	Joint Monitoring Programme, UNESCO-WHO (2008 report; data from 2006)
Productivity agricultural water	\$/cap/m ³	Pacific Institute (latest available)
Activity irrigated areas	%	FAO-Aquastat (latest available)
Utilities efficiency	%	IB-NET and national experts
Water related health	%	Human Development Report (UN 2008)
Water affordability	%	National experts
Water footprint	m ³ /cap/y	UNESCO-IHE (2004)
Biodiversity	index	Yale University (2005)

Indicators	Definitions
1.	Percentage of the renewable water which is not used
2.	JMP definition of access to sanitation
3.	JMP definition of access to water supply
4.	Crude proxy: Value of agricultural production divided by the water volume abstracted for agriculture (does not take into account the use of rainfall)
5.	Proxy: Area actually irrigated as percentage of area equipped for irrigation
6.	Proxy: (1 - x), x = Non-revenue water; water produced and not billed by water supply utilities
7.	Proxy: (1 - x), x = Children with diarrhoea receiving oral rehydration and continued feeding (% under age 5)
8.	Proxy: percentage of water bill in the income of poor households
9.	The water footprint of a nation shows the water that is used to produce the goods and services consumed by the inhabitants of the nation. It includes two components: the internal and the external water footprint. The first component refers to the appropriation of domestic water resources; the latter to the appropriation of water resources in other countries
10.	Part of the environment performance index defined by Yale University assessing the biodiversity and wild habitat health.

Table 5:
Outcomes indicators

The Atlas documents these indicators for all countries sampled. The indicators 4, 8 and 9 for each country are displayed on a 0% - 100% scale in the graphs of the Atlas, using a ratio to the maximum value of the indicator in the group of countries with similar context (the respective countries can be identified in Table 10 below, the maximum values of the 3 indicators for the 3 context groups are in grey).

Two indicators (1) water access and (2) sanitation access are used to classify countries in terms of performance. Such a crude analysis is not meant to suggest that the performance of the water and sanitation sectors in a country can be reduced to these two dimensions, but the classification does allow reasonable analyses in the context of the present survey. The criteria for classifying countries according to performance were established to split countries in groups of similar sizes and the resulting groupings are shown below.

Table 6					
Sanitation access	Level	Group	Water Access	Level	Group
SA<0.4	Low	L	WAc<0.7	Low	L
0.4<=SA<0.7	Medium	M	0.7<=WAc<0.9	Medium	M
0.7<=SA	High	H	0.9<=WAc	High	H

Table 6: Outcomes indicators water access and sanitation access used to classify countries in terms of performance

Table 7			
High		Egypt, Botswana, Pakistan, Viet Nam	Philippines, Mexico, Colombia, Albania, Jordan, Bulgaria, Trinidad, Uruguay, Iran ²⁰
Medium	Bangladesh, Burkina Faso, Senegal, Congo	Cape Verde, Bolivia, Nicaragua	Morocco, Sri Lanka, Samoa, Kyrgyzstan
Low	Chad, Ethiopia, Madagascar, Mozambique, Mauritania, Rwanda, Tanzania	Yemen, Zambia, Lao	Tajikistan
	Low	Medium	High

Table 7: Groups of countries according to water access and sanitation access

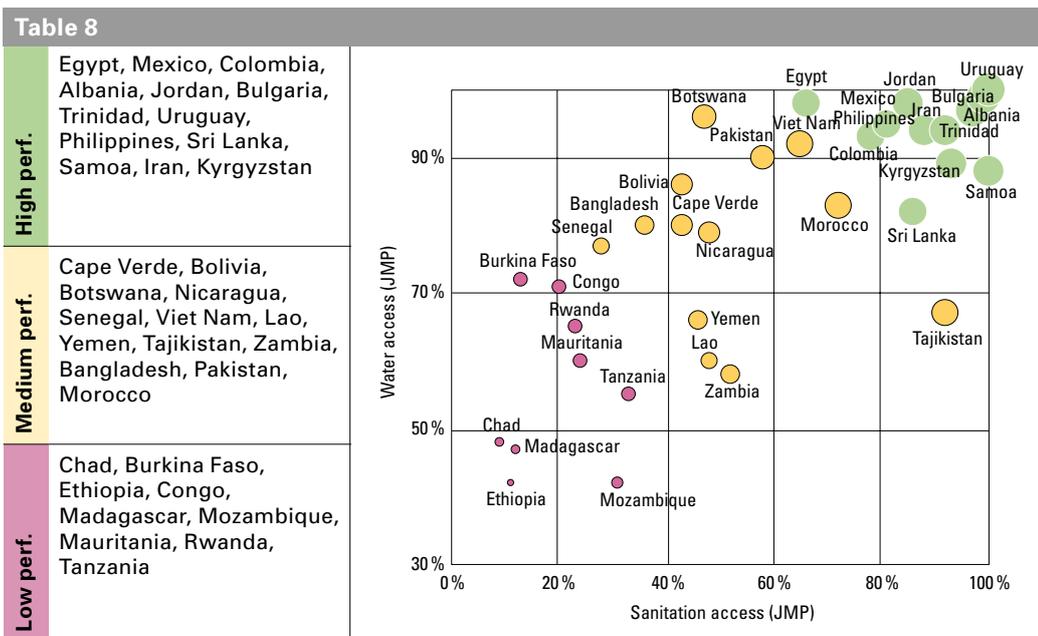


Table 8: Country performance classified by access to sanitation and water

The size of the bubble and the colours indicate the performance group (low performance = pink, medium performance = yellow, high performance = green)

Overall remarks on the country context and outcomes indicators

Context and performance are correlated but a closer analysis revealed some dispersion; some countries with less favourable context have performed satisfactorily while countries with more favourable context performed relatively poorly.

The numerical values of all indicators are provided in the two tables below.

Indicators	Renewable water resources / year	Hydropower capability	Population	Urban population / total	Human development	GDP (PPP)	Contribution of agricultural sector to GDP	Investment climate	ODA for water sector /year	Storage capacity surface water	Irrigated area equipped / potential
Unit	m ³ /cap	TWh	'000	%	index	\$/cap	%	index	\$/cap	km ³	%
Albania	13,031	15	3,200	45 %	0.80	5,316	23%	0.61	5.58	0.56	
Bangladesh	7,897	2	153,300	25%	0.55	2,053	20%	0.48	0.47	20.30	50%
Bolivia	67,666	126	9,200	64%	0.70	2,819	13%	0.55	4.17		6%
Botswana	8,167		1,800	57%	0.65	12,387	2%	0.68	4.19	0.38	11%
Bulgaria	2,519	15	7,700	70%	0.82	9,032	9%	0.62			
Burkina Faso	1,259	1	13,900	18%	0.37	1,213	33%	0.55	3.42	5.10	15%
Cape Verde	600		500	57%	0.74	5,803	12%	0.58	11.40	0.00	89%
Chad	4,257	N	10,100	25%	0.39	1,427	33%	0.46	1.72		9%
Colombia	47,483	200	44,900	73%	0.79	7,304	12%	0.61	0.14	12.50	14%
Congo	231,111	10	3,600	60%	0.55	1,262	55%		0.14		1%
Egypt	1,192	50	72,800	43%	0.71	4,337	15%	0.53	2.49	169.00	77%
Ethiopia	1,392	260	79,000	16%	0.41	1,055	49%	0.54	0.42	3.46	0%
Iran	1,981	70	69,400	67%	0.76	7,968	11%	0.43	0.00	39.20	48%
Jordan	160	2	5,500	82%	0.77	5,530	4%	0.64	12.42	0.14	86%
Kyrgyzstan	8,942	99	5,200	36%	0.70	1,927	35%	0.60	0.55	21.50	48%
Lao	58,526	63	5,700	21%	0.60	2,039	43%	0.49	1.78	7.31	26%
Madagascar	18,118	180	18,600	27%	0.53	923	27%	0.61	0.56	0.49	72%
Mauritania	3,800		3,000	40%	0.55	2,234	25%	0.53	3.74	0.89	18%
Mexico	4,384	49	104,300	76%	0.83	10,751	4%	0.66	0.46	180.00	64%
Morocco	951	5	30,500	59%	0.65	4,555	13%	0.57	2.75	16.09	87%
Mozambique	10,537	38	20,500	35%	0.38	1,242	21%	0.57	2.39	64.47	4%
Nicaragua	35,762	10	5,500	59%	0.71	3,674	17%	0.63	4.32	0.25	9%
Pakistan	1,479	219	158,100	35%	0.55	2,370	22%	0.58	0.41		
Philippines	5,662	20	84,600	63%	0.77	5,137	14%	0.57	0.85		50%
Rwanda	565	1	9,200	19%	0.45	1,206	39%	0.52	1.32		5%
Samoa	0		200	22%	0.79	6,170	11%		12.70		
Senegal	3,339	4	11,800	42%	0.50	1,792	18%	0.59	4.24	1.60	29%
Sri Lanka	2,618	7	19,100	15%	0.74	4,595	17%	0.59	2.98	5.94	100%
Tajikistan	15,106	264	6,600	25%	0.67	1,356	23%	0.57	0.29	28.97	95%
Tanzania	2,364	40	38,500	24%	0.47	744	43%	0.56	1.40	4.20	9%
Trinidad and Tobago	2,954		1,300	12%	0.81	14,603	1%	0.71	0.42	0.08	0%
Uruguay	42,121	10	3,300	92%	0.85	9,962	9%	0.69	0.09		10%
Viet Nam	10,485	123	85,000	26%	0.73	3,071	20%	0.50	1.85		50%
Yemen	194		21,100	27%	0.51	930	13%	0.54	2.18	0.18	
Zambia	9,148	30	11,500	35%	0.43	1,023	20%	0.58	2.94	106.00	30%

Table 9:
Numerical values of context
indicators

Indicators	% renewable water not used	Access sanitation	Access water supply	Productivity agri. water	Activity irrigated areas	Utilities efficiency	Water related Health	Water related cost	Water footprint	Biodiversity
Unit	%	%	%	\$/cap/m ³	%	%	%	%	m ³ /cap/y	index
Albania	96%	97%	97%	3.42		31%	49%		1,228	22%
Bangladesh	93%	36%	80%	0.69	73%	64%	48%		896	25%
Bolivia	100%	43%	86%	2.74	100%	72%	46%		1,206	67%
Botswana	99%	47%	96%	5.42	96%		93%		623	
Bulgaria	64%	99%	99%	4.28		38%		6%	1,395	31%
Burkina Faso	95%	13%	72%	7.33	97%	83%	53%		1,529	80%
Cape Verde	93%	43%	80%	19.42	66%	31%			995	
Chad	99%	9%	48%		87%		73%	4%	1,979	61%
Colombia	99%	78%	93%	8.07		44%	61%		812	60%
Congo	100%	20%	71%		70%					64%
Egypt	21%	66%	98%	0.78	95%		71%		1,097	24%
Ethiopia	95%	11%	42%	5.51		33%	62%		675	44%
Iran	47%	88%	94%	0.88	100%	31%			1,624	48%
Jordan	-15%	85%	98%	1.27		56%	56%	3%	1,303	56%
Kyrgyzstan	78%	93%	89%	0.37	100%	70%	84%		1,361	68%
Lao	99%	48%	60%	1.86	96%		63%		1,465	76%
Madagascar	96%	12%	47%	0.30	99%	34%	53%		1,296	40%
Mauritania	85%	24%	60%	0.99	51%	30%	72%		1,386	6%
Mexico	83%	81%	95%	0.68	88%	32%		3%	1,441	49%
Morocco	57%	72%	83%	1.65	100%		54%		1,531	55%
Mozambique	100%	31%	42%	9.46	34%		53%		1,113	40%
Nicaragua	99%	48%	79%	3.20	83%	58%	51%		819	69%
Pakistan	28%	58%	90%	0.48		40%	67%	5%	1,218	23%
Philippines	94%	78%	93%	2.60	95%	55%	24%		1,543	69%
Rwanda	97%	23%	65%			38%	84%	2%	1,107	63%
Samoa		100%	88%					2%		
Senegal	94%	28%	77%	1.77	58%	19%	67%		1,931	68%
Sri Lanka	75%	86%	82%	1.31		34%		1%	1,292	57%
Tajikistan	88%	92%	67%	0.16	100%	53%	71%		939	49%
Tanzania	94%	33%	55%	2.43		45%	47%		1,127	74%
Trinidad and Tobago	92%	92%	94%	6.47		43%	69%		1,039	32%
Uruguay	98%	100%	100%	1.00	100%	54%		2%		
Viet Nam	92%	65%	92%	0.96	70%	35%	61%		1,324	43%
Yemen	-62%	46%	66%	0.36			77%		619	14%
Zambia	98%	52%	58%	1.66	100%	66%	52%		754	82%

Table 10:
Numerical values of outcomes indicators

Annex 3: Context and outcomes indicators

- 18 GDP is already taken into account in the HDI (along with life expectancy and knowledge dimensions). Even though they are not independent of each other, both GDP and HDI have been kept in the list, mainly because they are widely used and represent easy references for analysis.
- 19 It is well understood that this indicator fails to discriminate between diverse water realities. Monsoon rains falling during a limited period of time do not endow a country with the same resources as timely well distributed precipitation. Similarly, the dependency ratio should be introduced in order to discriminate further between countries enjoying internally generated water resources and those that depend on neighbouring countries.
- 20 No data on sanitation in JMP 2008 report (estimated: 88 %, experts' value coherent with JMP 2000).

Annex 4: Supra-national policy actions



Support the development of IWRM plans

Policy Action:

“Providing additional resources, as appropriate, for regional and sub-regional initiatives, such as the African Water Facility, for the development of IWRM national plans”.

According to the UN-Water survey, 17 of the 77 developing countries that responded to the survey have national IWRM plans in place and partially implemented; a further two countries have fully implemented these plans.

A number of donor agencies have supported, or are supporting, the development of national IWRM plans, for example in the Caribbean and Pacific (UNEP-GEF), Central Asia (Kazakhstan), Southeast Asia (Indonesia), Eastern Europe (in the context of implementation of the EU water framework directive), and more than 20 countries in Africa.

African Water Facility	Niger, Senegal, Mauritania, Burundi, Namibia
European Water Facility	Gambia, Guinea Conakry, Guinea Bissau, Sierra Leone, Liberia, Togo, Côte d'Ivoire
World Bank	Mali
Canada	Mali, Senegal, Kenya, Zambia, Malawi
The Netherlands	Cape Verde, Eritrea, Mozambique, Cameroon, Swaziland, Benin
Denmark	Burkina Faso, Ghana, Benin
USA	Ethiopia

Table 1:
Donor-supported IWRM
planning exercises in Africa

To put more focus on the African Water Facility: in 2007 AWF approved projects in National Water Resources Management worth € 2,740,775 for IWRM plans in Mauritania and Niger, and IWRM implementation in Senegal. In 2006 AWF approved projects worth € 962,000 for IWRM plans for Burundi and Namibia.

Use Multilateral Environmental Agreements as leverage

Policy Action:

“Encouraging, where appropriate and within their mandates, the use of MEAs to leverage additional resources for IWRM”.

GEF is the financial mechanism for MEAs (BD, CC, POPs, LD conventions) and is therefore considered as the main player mobilising funding in this area. Through GEF's focus on international waters is associated with many global and regional conventions that are involved with transboundary water systems, mostly at a regional level. GEF interven-

tions are often aimed at getting governments to adopt regional conventions to show their commitment to sustainability after GEF projects end. For example, both the Convention on the Sustainable Management of Lake Tanganyika and the Western and Central Pacific Fisheries Convention are the result of GEF projects on international waters.

A number of GEF projects related to IWRM are built around other agendas (e.g. the WSSD 2005 IWRM target); because IWRM delivers on several mandates of the MEAs (such as protecting watersheds and coral reefs, reducing siltation), it could be argued that GEF operates as an “MEA fund” in financing projects related to IWRM.

GEF projects relating to IWRM:

- A proposal for an IWRM plan for Botswana (\$ 1 million) is being revised and there will be up to three additional national IWRM medium-sized projects, most likely in Central Asia, Latin America and the Arab States.
- The soon-to-be-submitted UNDP-GEF Kura River basin project will include national IWRM plans as outputs in Armenia, Azerbaijan and Georgia (\$ 1 million).
- On a broader front, UNDP-GEF applies IWRM principles to its transboundary lake, river basin and aquifer management projects in a wide range of water bodies, including the Nile, Dnepr, Danube, Orange, Okavango, Niger, Senegal, Kura, Nubian Aquifer, and Lakes Tanganyika, Chad, and Peipsi.
- The Global Environment Facility-funded Integrating Watershed and Coastal Areas Management project (GEF-IWCAM Caribbean SIDS IWRM project \$ 12 million) is a five-year regional project that seeks to strengthen the commitment of countries to implement an integrated approach to watersheds and coastal areas management (IWCAM). The project involves 13 Caribbean States including Cuba, Haiti and the Dominican Republic.
- The overall objective of the regional project Implementing Sustainable Integrated Water Resource and Wastewater Management in the Pacific Island Countries (Pacific SIDS IWRM project \$ 10 million) is to improve water resource management and water use efficiency in Pacific Island Countries (PICs). The project will be co-funded by GEF and the European Union Water Facility (EU WF) in a partnership of mutual aid and assistance.

Support African initiatives in the area of water

Policy Action:

“Support African initiatives in the area of water, within the framework of AMCOW, with particular reference to basin-wide initiatives in Africa”.

AMCOW holds a central position with regards to water initiatives in Africa. It fostered the creation of the African Water Facility, hosted by the African Development Bank. AMCOW plays a key role in the European Union Water Initiative (EUWI), which focuses on five basins, the Volta, Niger, Kagera, Chad and Orange. AMCOW has official links with GWP and UNEP UCC-Water for promoting the development of IWRM plans. The initiatives taken within these different threads (AWF, EUWI, GWP etc.) are substantial and can be considered as being undertaken “within the framework of AMCOW”. Most donor initiatives on water in Africa take into account the “oversight” institutional position of AMCOW.

As a specialised technical committee of the African Union (AU), AMCOW is also strongly related to AU programmes such as NEPAD. With the assistance of AfDB, NEPAD is preparing a Medium to Long-Term Strategic Framework for Infrastructure Development that will incorporate transboundary water resources.

AMCOW initiated several partnership programmes, such as the AfDB Rural Water and Sanitation Initiative (RWSSI) and the European Union Water and Sanitation Initiative. AMCOW has also forged partnerships with African Network of Basin Organizations (ANBO), Inter-Agency Group on Water in Africa (UN-Water/Africa), African Network of Civil Society on Water (ANEW) and the African Journalists' Network. On institutional capacity building, AMCOW has, in collaboration with others, established the Water Utility Partnership for Capacity Building in Africa (WUP), Union of African Water Suppliers (UAWS), Water for African Cities Programme, African Water Association (AfWA) and Partners for Water and Sanitation (PAWS).

Support transboundary agreements

Policy Action:

“Enhance cooperation among riparian States through relevant arrangements and/or mechanisms with the consent of the States concerned, taking into account the interests of the riparian States”.

Several sources and references provide an overview of initiatives in this area; a few that focus on Africa are:

- “Donor activity in transboundary water cooperation in Africa -Results of a G8-initiated survey 2004-2007”. This review summarises the most recent initiatives in Africa relating to transboundary water management. The review was initiated by GTZ which is running an important programme on strengthening transboundary water management (secretariat based in Uganda).
- African Ministers' Council on Water conference of African river and lake basin organization (Kampala, Uganda, 19-20 October 2006).
- The Atlas of International Freshwater Agreements published by Oregon University (in cooperation with UNEP and FAO) contains an historical overview of international river basin management worldwide and a detailed listing of more than 300 international freshwater agreements.

Significant recent initiatives in Africa include:

- The Volta Basin Authority (VBA). Six riparian countries of the Volta basin (Burkina Faso, Ghana, Cote d'Ivoire, Mali, Benin and Togo) have signed an agreement on the establishment of a Volta Basin Authority (VBA), a body to coordinate policies on the proper use and to oversee the management of the water resources of the Volta River. The establishment of VBA is supported, among others, by EUWI, AWF and GEF.
- “Water charters” developed and endorsed by stakeholders in the Senegal and Niger basins.

Support awareness campaigns on sanitation

Policy Action:

“Supporting existing regional and inter-regional initiatives such as the Global WASH Programme for water and sanitation”.

While some national WASH campaigns have been active, between 2005 and 2007 activities and resources for the WSSCC, initiator of WASH, were limited. A Global Sanitation Fund was launched in March 2008 which should lead to a dramatic increase in spending from 2008 onwards.

Activities at international level have been pursued through various mechanisms in the context of the International Year of Sanitation, notably the WSP World Bank programme.

Technical Assistance on wastewater collection treatment and reuse

Policy Action:

“Establishing regional project development facilities to provide seed capital, training and technical assistance for wastewater collection, treatment and reuse”.

Globally 20 million hectares of land are irrigated with undiluted or partially diluted wastewater (best estimate: Future Harvest, 2001). It is not clear whether or not substantial resources have been allocated at regional level by donors for project development facilities in this field.

Some related initiatives are:

- A number of donor supported projects regarding wastewater reuse have been implemented in North Africa and the Middle East, most notably in Tunisia and Jordan with financing from The World Bank and KfW. These include treatment plants, BOT projects and capacity building activities.
- R&D through organizations such as CREPA (Centre Régional pour l’Eau Potable et l’Assainissement à Faible Coût, Ouagadougou, Burkina Faso), EAWAG-SANDEC (Swiss Federal Institute of Aquatic Science and Technology – Water and Sanitation in Developing Countries), the Water Research Commission in South Africa and other agencies for sustainable sanitation.
- The SWITCH initiative and Cities Farming for the Future (RUAF) are two examples of multi-stakeholder approaches (the Household Centred Environmental Sanitation (HCES) approach, SANDEC/WSSCC, 1999, and the learning alliance (LA) stakeholder approach). IWMI is responsible for the pilot SWITCH project in Accra on productive use of water (including wastewater, storm water and freshwater) and should come up with recommendations on technology options and guidelines.
- Support is provided by the World Bank through its regionally based Water and Sanitation Programme (WSP). Some support is also provided by UN Habitat in the context of the Water for African Cities and Water for Asian Cities programmes.

Regional water resources protection

Policy Action:

“Support regional and sub-regional arrangements, to protect water resources from pollution, addressing the specific needs of arid, semi-arid and coastal countries (wastewater collection treatment and reuse)”.

It is unclear whether substantial resources have been allocated at regional level by donors to these areas during the period under review.

The two GEF SIDS programmes mentioned above in the context of MEA leverage are good examples of projects that address the needs of coastal countries, as is the GEF/UNDP/IMO Regional Programme on Partnerships in Environmental Management for the Seas of East Asia (PEMSEA). PEMSEA has been active in protecting life-support systems and enabling the sustainable use and management of coastal and marine resources through intergovernmental, interagency and multisectoral partnerships.

An example of an institution supporting arid countries at regional level is CILLS in the Sahelian countries, although the level of funding has been relatively modest in recent years.

United Nations
Department of Economic and Social Affairs
Division for Sustainable Development
Two UN Plaza
New York, NY 10017
USA

