



# Which Water *for* Which Use?

Compendium of Water Quality Regulatory Frameworks



an initiative of



with the collaboration of



# About the Compendium

Water quality issues are complex and dynamic in nature and need urgent attention and action. Improving efficiency of water use requires regulatory frameworks that better reflect how different water uses require different water qualities, such as water from industrial processes being reused in agriculture. Drafting regulatory instruments to better manage water qualities that are 'fit for purpose' can benefit from the wide range of standards and guidelines currently available.

The Compendium of Water Quality Regulatory Frameworks is an overview and analysis of a variety of selected water quality guidelines, standards and regulatory frameworks for different uses and geographical regions. The overall objective is to contribute towards improving access to information on water quality requirements for different uses, promoting efficient use and, ultimately, reducing water use conflicts. The Compendium offers an integrated and descriptive analysis of each selected law and policy, while also considering complementary instruments, management approaches and lessons learned on implementation.

## What is the Compendium?

It is a reference tool of laws and policies regulating water quality for different uses at a variety of geographical scales. The Compendium is a [living document](#) that will continuously improve its aims as information about policy and legal instruments and their implementation is updated by the users.

The Compendium provides a basis by which to assess policy and regulatory instruments, and to identify what makes an efficient and effective guideline, standard, regulation or policy.

## Who Will Use the Compendium?

The immediate target group of the Compendium are public officials and regulators - decision makers at large. The development process of the Compendium has also established a network of water quality experts and practitioners promoting the wise use of different water qualities for various purposes. The Compendium can also be used by a wider audience of water quality experts, practitioners, academia and the general public.

The Compendium contains a selection of recent water quality guidelines and standards for different uses. These guidelines and standards adopt various forms - binding and non-binding - with common characteristics and approaches that make them innovative, practical and effective in promoting the wise use of water resources.

The selected instruments are from a variety of sectors including drinking water, agriculture, bathing water, ecosystems and hydropower. Examples from each region provide an overview of current water quality instruments applicable at different geographical scales.

To date, the Compendium comprises 46 law and policy instruments, which have been analysed in more depth. Together, they cover a comprehensive range of water uses.



Figure 1. Regulatory instruments and case studies included in the Compendium according to geographical scale (G: Global; R: Regional; L: Local)

**The Compendium of Water Quality Regulatory Frameworks is a UN-Water initiative developed in collaboration with the International Water Association (IWA) and the United Nations Environment Programme (UNEP). It aims to fulfil the objectives of UN-Water's Thematic Priority Area on Water Quality, by supporting governments and other stakeholders to address challenges that contribute to water quality targets defined through successive World Water Forums and several key objectives in the Rio+20 Communiqué. The Compendium will provide relevant information for the preparation of a framework that guides the use of water quality that is fit for purpose.**

# Overview of Water Quality Regulatory Instruments

## Criteria for Assessment

The criteria for assessment are one of the key outputs of this Compendium but also a tool for its continuous development and update. The criteria highlight key information that the reader should look into when using the Compendium as a reference. They also suggest areas where more information is needed and can be improved in the Compendium.

**The criteria were developed to answer: What makes a law or policy a good instrument to regulate water quality? The response is a checklist which can be used in drafting, management and implementation of water quality instruments.**

Good instruments are those that meet their objectives efficiently. The following criteria are thus suggested to determine whether an instrument is effective or not, answering the following questions:

1. Are the objectives sufficiently clear so that they can be monitored through a set of indicators? For example, a reduction in the concentration of one or more particular water quality parameters, the frequency of incidence of non-compliance, etc.
2. Are there monitoring and evaluation schedules? This includes a description of monitoring and evaluation practices, with specification of numbers of samples, frequencies of sampling, sources of samples, and parameters tested.
3. Is there laboratory analytical capacity and quality control, ensured by having analyses conducted by an accredited laboratory (e.g. the South African National Accreditation System; in Brazil, the National Institute of Metrology, Quality and Technology)?
4. Is there a baseline against which future situations can be assessed should be established (i.e. benchmarking)? Have the parameters that have been included in the baseline assessment been identified and aligned with the pre-established monitoring and evaluation schedule?
5. Is there access to information about the facilities that have permits to discharge pollutants? For example, this could be through a water pollution database.
6. Is there a regulatory framework that enables public acceptance of the respective water quality requirements? Effective water quality guidelines are a progressive work that has to be improved and adapted according to regional differences and emerging needs.

## Summary of Key Findings

1. Local and specialised instruments provide sound guidance for applying different water qualities for different uses. There still needs to be coherence between sectors and geographical levels. Reference to global guidelines in local regulatory implementation provides a consistent framework.
2. Effective regulations require that the implementing authority acts with independence and sufficient powers to enforce regulations, whether the authorities are centralised or delegated to the regional or local level. However, compliance is better achieved when users trust the implementation and enforcement processes. This can be promoted with transparency and access to information. The IWA Lisbon Charter can be used as a point of reference for institutional and regulatory framework development. It provides a set of guiding principles for sound public policies and regulation for water services including water quality.
3. At a local or catchment level, guidelines and standards are only as good as the capacity of those implementing and controlling them. Investing in adequate training makes the difference between a good regulatory text and actually controlling water quality. Developing practical and user-friendly tools for implementation can facilitate the task.
4. The enabling environment of the different water quality regulations is important. When deciding on an approach to regulate water quality for different uses, decision makers need to take part in cross sector/cross boundary dialogues. A clear definition of roles and competencies is pivotal to involve all relevant stakeholders in such dialogue.
5. Economic affordability and feasibility can be compatible with better water quality standards. Nonetheless, to support enforcement, finance and investment in implementing water quality instruments are needed during the drafting process.
6. Rapidly evolving technology and infrastructure for improving water quality require flexible and responsive regulators (e.g. when validating new water treatment technologies). An overarching framework for validating innovations can support the replication of good practices and capacity building. The role of regulators is crucial in providing timely and effective responses; thus institutional and management settings need to be coherent with such a framework.
7. Drafting and implementation processes can benefit from lessons learned in similar geographies. Reference to other jurisdictions by decision makers can identify opportunities for replicating best practices or possibilities for inter-institutional cooperation or institutional strengthening. The Compendium provides a starting point for this type of collaboration.



## List of Selected Guidelines

Africa	2011	World Health Organization Drinking Water Quality 2011	In use	All
	2006	World Health Organization Safe Use of Wastewater 200	In use	All
	2006	Kenya Water Quality Regulations 2006	In use	Kenya
	2002	Morocco Water Quality Standards for Irrigation 2002	In use	Morocco
	1996	South Africa Aquatic Ecosystems 1996	In use	South Africa
	1996	South Africa Domestic Use 1996	In use	South Africa
Asia-Pacific	2011	Australia Drinking Water Guidelines 2011	In use	Australia
	2006	Australia Water Recycling Guidelines 2006	In use	Australia
	2013	China FAO Control Water Pollution from Agriculture 2013	In use	China
	2006	China Standards for Drinking Water Quality 2006	In use	China
	2005	Japan Water Reuse Guidelines 2005	In use	Japan
	1997	Korea Water Quality and Ecosystem Conservation Act 1997	In use	Korea
	2001	Russia Requirements for Drinking Water Quality 2001	In use	Russia
	1991	Russia Quality Standards for Feed Water and Steam 1991	In use	Russia
	1999	Belarus Requirements for Drinking Water Quality 1999	In use	Belarus
	2006	EU Bathing Water Directive 2006	In use	European Union
	1998	EU Drinking Water Directive 1998	In use	European Union
	2006	EU Shellfish Water Directive 2006	Repealed	European Union
	1991	EU Urban Waste-water Treatment Directive 1991	In use	European Union
	2000	EU Water Framework Directive 2000	In use	European Union
Europe	2006	EU Groundwater Directive 2006 In use	In use	European Union
	2008	EU Environmental quality standards for surface water 2008	In use	European Union
	2011	France Misting Systems Guidelines 2011	In use	France
	2007	France Water Safety Regulation 2007	In use	France
	2013	France Cooling Tower Regulation 2013	In use	France
	2006	France Harvested Rainwater for Domestic Use Regulation 2006	In use	France
	2014	France Irrigation with Reclaimed Water Regulation 2014	In use	France
	2001	Germany Potable Water Ordinance 2001	In use	Germany
	2012	Kosovo Drinking Water Quality Instruction 2012	In use	Kosovo
	2014	Moldova Water Supply and Sanitation Strategy 2014-2018	In use	Moldova
	2002	Romania Drinking Water Quality Law 2002	In use	Romania
	2007	Spain Reclaimed Water Use Decree 2007	In use	Spain
	2004	Turkey Regulation on water pollution control 2004	In use	Turkey
	Latin America & the Caribbean	1983	Caribbean Protocol on Land Activities 1983	In use
2000		Brazil Conama Resolution 274, Recreational Water Quality 2000	In use	Brazil
2005		Brazil Conama Resolution 357, Surface Water Quality Guidelines 2005	In use	Brazil
2008		Brazil Conama Resolution 396, Groundwater Quality Guidelines 2008	In use	Brazil
2011		Brazil Conama Resolution 430, Effluent Quality Regulations	In use	Brazil
2011		Brazil Ordinance No 2914, Drinking Water Quality 2011	In use	Brazil
North America	2012	Canada the Metal Mining Effluent Regulations 2012	In use	Canada
	2012	Canada Recreational Water Quality 2012	In use	Canada
	1996	Canada Drinking Water Quality 1996 (2012)	In use	Canada
	1997	Texas Use of Reclaimed Water 1997	In use	United States of America
	2004	US EPA Guidelines for Water Reuse 2004	Repealed	United States of America
2012	US EPA Guidelines for Water Reuse 2012	In use	United States of America	
2009	Jordan Water Strategy 2009	In use	Jordan	

\* Barbados, Colombia, Cuba, Costa Rica, Dominica, Dominican Republic, France, Jamaica, United Mexican States, Netherlands, Panama, St. Lucia, Trinidad and Tobago, UK, USA, Venezuela