



Water for Business

Initiatives guiding sustainable water management
in the private sector

Version 2
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World Business Council for
Sustainable Development



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About IUCN

Founded in 1948, IUCN (International Union for Conservation of Nature) brings together States, government agencies and a diverse range of non-governmental organizations in a unique world partnership: over 1,000 members in all, spread across some 160 countries.

As a Union, IUCN seeks to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

IUCN builds on the strengths of its members, networks and partners to enhance their capacity and to support global alliances to safeguard natural resources at local, regional and global levels.

www.iucn.org

About the WBCSD

The World Business Council for Sustainable Development (WBCSD) brings together some 200 international companies in a shared commitment to sustainable development through economic growth, ecological balance and social progress. Our members are drawn from 36 countries and 22 major industrial sectors. We also benefit from a global network of about 60 national and regional business councils and partner organizations.

Our **mission** is to provide business leadership as a catalyst for change toward sustainable development, and to support the business license to operate, innovate and grow in a world increasingly shaped by sustainable development issues.

Our **objectives** include:

- *Business Leadership* – to be a leading business advocate on sustainable development;
- *Policy Development* – to help develop policies that create framework conditions for the business contribution to sustainable development;
- *The Business Case* – to develop and promote the business case for sustainable development;
- *Best Practice* – to demonstrate the business contribution to sustainable development and share best practices among members;
- *Global Outreach* – to contribute to a sustainable future for developing nations and nations in transition.

Disclaimer

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Finally, we would like to extend our gratitude and appreciation to The National Council for Air and Stream Improvement (NCASI) for contributing with technical content to the glossary.

ncasi



1. Introduction

Context

Every business depends and impacts on water¹ resources. Some use it to process raw materials and manufacture goods. Some use it for cooling and cleaning. For others, it is a central ingredient in the goods they produce, or it is required to consume the product they sell.

The future of business depends on the sustainability of water resources, which are increasingly under pressure. Globally, per capita availability of freshwater is steadily decreasing and the trend will inevitably continue as the world's population swells towards 9 billion, emerging economies increase consumption levels and climate change unfolds.

For the global economy to carry on expanding at the same pace without improvements in efficiency, worldwide annual water consumption would have to rise from 4,500 km³ today to 6,900 km³ in 2030 – that is 40% above current accessible, reliable supply.²

Some of the key questions facing business today include: How might water availability and allocations restrict my company's supply chain? What effects will the lack of water security have on my markets? Will my customers have enough water to enable them to use my products or services? Can I justify my water consumption with regard to other users, including environmental requirements? And also: Can I boost my revenues by providing solutions?

The global business community increasingly recognizes the water challenge, but to respond effectively it needs guidance, tools, standards and schemes to enable change to more sustainable practices. Since 2006, many new initiatives and concepts have emerged to address this need, driven by business leaders in the field, civil society and governments. Most are global with multi-stakeholder representation; but some are also addressing more and more the specificities of water usage for a particular sector (the beverage industry and the mining sector for example). Water risks are increasingly capturing the attention of the capital markets as reflected by the recent launch of the CDP Water Disclosure.

The WBCSD and IUCN have joined forces to produce this guide to help business better understand and meet the water challenge.

The WBCSD has been actively working on water issues for over 10 years and has helped move water up everybody's business agenda. The WBCSD recently produced a set of tools intended to help member companies integrate water issues in their

strategic planning. The Global Water Tool™,³ launched in August 2007 and updated in 2009, helps companies map their water use and assess risks relative to their global operations and supply chain.

IUCN aims to use lessons from a decade of piloting implementation of sustainable water management in river basins globally to support action by business. It encourages business community engagement in ensuring that emerging tools will meet their needs and to help them build leadership on implementing sustainable water management from local to global levels.

Purpose and scope

The world is in desperate need of tools for sustainable water management. Some exist and are widely used, others are still under development. This guide is aimed at helping business identify which initiatives and approaches will most suit their needs, and to help developers of schemes understand opportunities for increasing impact through consensus building and joint action.

This overview is not exhaustive, but tries to concisely capture major business-relevant initiatives that address the challenge of better defining sustainable water management. These can be through different approaches, including: guidelines, tools, measurement methodologies, standards, reporting indicators and stewardship schemes.

The key objectives of this document are to:

- Provide a structured overview of major initiatives to improve understanding of “who is doing what”;
- Help build a common language for business on water sustainability;
- Support the identification of risks and opportunities, gaps and complementarities;
- Demonstrate leadership and facilitate business engagement in relevant initiatives.



¹ The term “water” used throughout this document refers to freshwater unless otherwise indicated.

² “Charting our Water Future”, 2030 Water Resources Group, 2009.

³ www.wbcd.org/web/watertool.htm

Structure

The information in this report is organized around three main sections:

- A matrix characterizing the initiatives and tools in terms of the main issue of concern, geographic focus, leading agent and multi-stakeholder approach;
- Factsheets summarizing the individual initiatives and enabling comparison;
- A companion glossary of key terms and definitions in the area of water management, together with key references used.

The main issues of concern have been divided into three categories:

- Tools that *support the identification of risks and opportunities* related to water use and impacts;
- Initiatives and tools that aim to help business (and other organizations) *measure water use and assess water-related impacts*;
- Approaches to *developing response options*, addressing questions such as how to report, what to disclose and how to recognize responsible water managers through certification schemes.

We are aware that overlaps may exist and that initiatives in one category may also touch upon another. We have decided to focus on the most prominent aspect of each initiative for the purpose of developing a useful characterization. We have selected these categories because we believe that they constitute a logical sequence: from understanding risks to accounting for water use and assessing impacts and exploring mitigation and response strategies.

The initiatives included in this overview have all approved the way they are described and characterized.



Next steps

This is the second version of the overview and we are committed to further updating it as initiatives mature and progress, or new ones emerge. The initial launch took place in August 2009 during the Stockholm World Water Week. Therefore we see it as a “living document” and will keep it in an electronic format that can be downloaded from:

- www.wbcsd.org/web/waterforbusiness.htm
- www.iucn.org/about/work/programmes/water

An overall objective now for the WBCSD Water Project is to provide collective cross-sectoral business perspectives on the development of tools and standards that will support company efforts to manage water-related risks and mitigate water-related impacts in cooperation with other stakeholders. Meaningful responses will require collaboration among users at the watershed level, an understanding on the local water situation based on accurate data and should not be considered in isolation from other environmental impacts including land use and energy consumption.⁴ Building on its expertise in developing corporate sustainability tools,⁵ the WBCSD has joined the Water Footprint Network and is engaging in the ISO process on water.

This is very much a learning journey: integrating water quantity and quality with time and place into a measurement of sustainable water use is a very complex challenge. However, some overarching principles should guide the development of these initiatives:

- **Focus** on using measurement for learning and decision-making rather than simply reporting.
- **Enable** companies to adapt approaches to their businesses processes - one size does not fit all.
- **Address** both the positive and negative impacts to remain a credible initiative in the eyes of non-governmental organizations, governments and business.
- **Reward** good practice by creating incentives for companies.

⁴ See Water, Energy and Climate Change – A contribution from the business community (2009): www.wbcsd.org/DocRoot/Dg6GYWJq7xuaL00OwZOi/WaterEnergyandClimateChange.pdf

⁵ In addition to the Global Water Tool (2007), the WBCSD co-developed the *Measuring Impact Framework* in 2009 (www.wbcsd.org/web/measuringimpact.htm), the *Corporate Ecosystem Services Review* in 2008 (www.wbcsd.org/web/esr.htm) and the *Greenhouse Gas Protocol* in 2001.

2. Summary table: Tools for sustainable water management



	Key focus of the initiative			
	Identify and assess water-related risks	Measure water use and assess water-related impacts	Develop response options and/or risk mitigation strategies	
Aquawareness				
Alliance for Water Stewardship™				
BIER Water Footprint Working Group				
CDP Water Disclosure				
Collecting the Drops: A Water Sustainability Planner				
Corporate Water Gauge™				
GRI™ Water Performance Indicators				
ISO – Water Footprint: Requirements and Guidelines				
Strategic Water Management in the Minerals Industry				
UK Federation House Commitment to Water Efficiency				
UN CEO Water Mandate				
Water Brief for Business				
Water Footprint Network				
Water Footprint, Neutrality and Efficiency Umbrella Project				
Water Neutral Offset Calculator				
WaterSense Program®				
Water Stewardship Initiative				
Water Use within Life Cycle Assessment (WULCA)				
WBCSD Global Water Tool©				

	Geographic Focus	Leader	Multi- stakeholder	More information
	Europe	Civil Society	✓	www.ewp.eu/projects/aquawareness/water-stewardship
	Global	Civil Society	✓	www.allianceforwaterstewardship.org/
	Global	Beverage Industry		www.bieroundtable.com/water_stewardship.html
	Global	Institutional Investors		www.cdproject.net/water-disclosure
	Global	Business		www.gemi.org/waterplanner
	Global	Business		www.sustainableinnovation.org
	Global	Business Civil Society	✓	www.globalreporting.org/ReportingFramework/G3Guidelines/
	Global	Government	✓	www.iso.org/iso/home.htm
	Australia	Mining & Minerals Industry		www.wateraccounting.net.au
	United Kingdom	Food & Beverage Industry Government	✓	www.fhc2020.co.uk
	Global	Business UN	✓	www.unglobalcompact.org/Issues/Environment/CEO_Water_Mandate/
	Global	Business		http://waterbrief.businessroundtable.org/
	Global	Academia Business	✓	www.waterfootprint.org
	Global	UN	✓	www.unep.fr/en/about/index.htm
	South Africa	Civil Society		www.waterneutral.org/calculator.asp
	United States	Government		www.epa.gov/WaterSense/
	Australia	Civil Society	✓	www.waterstewardshipinitiative.com
	Global	Academia Business	✓	fr1.estis.net/sites/lcinit/
	Global	Business		www.wbcds.org/web/watertool.htm

3. Initiatives factsheets

BUILDING TOOLS FOR SUSTAINABLE WATER MANAGEMENT

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Do you wish to suggest another initiative or update the description of one that is already included?

Please let us know!

Submit the online form, fill in the one in the annex and fax it to
+41 (0)22 839 31 31, or write to us at water@wbcsd.org.

Organization	The European Water Partnership (EWP) , a non-profit organization structured as an open and inclusive member association with the overall mission of giving water one common voice in Europe.
Date of creation	June 2008
Key contacts	Agnes Biesiekierska: a.biesiekierska@ewp.eu Sabine von Wiren-Lehr: s.von-wiren-lehr@ewp.eu
Website	www.ewp.eu/projects/aquawareness/water-stewardship
Objectives	Respond to the growing water challenges and contribute to a movement of change in Europe by: <ul style="list-style-type: none"> • Creating a common vision for water in Europe with widely accepted principles for sustainable water management • Supporting change of mindset, behavior and practices • Shaping and integrating water into policy and business strategy agendas • Creating a water saving and efficiency culture among private, business and agricultural users • Supporting the shift from supply to demand management through information, education and training
Key activities	Based on the Water Vision for Europe: The Awareness Program aims to introduce a water saving and efficient culture among political decision-makers, key stakeholders and inhabitants by improving information and creating transparency on the water situation to support change of behavior and efficient policy-making. The Water Stewardship Programme aims to offer positive incentives to implement sustainable water management (SWM) and provide water users with a tool to establish, assess/ certify and communicate SWM for their production system. Working groups have defined criteria and indicators for SWM that will form the basis of the water stewardship standard. This standard may be verified either by an internal audit or by a certification of independent control bodies. If compliance to these water stewardship criteria is recognized, the water user may refer to it in the form of a branding.
Geographic and sectoral focus	Europe and cross-sectoral Working groups have been established in the following sectors: industry, agriculture and urban areas.
Approach	Voluntary program Stakeholder consultation process followed by field-testing and pilot studies Standard-setting process
Timeline	Launching event of the water stewardship criteria scheduled for winter 2010
Participants and Partners	EWP members (incl. governmental agencies, knowledge institutes, companies, NGOs) and strategic partners Partnership with the Alliance for Water Stewardship: EWP is coordinator of the regional European water stewardship process Support from EU Institutions
Business involvement	Confederation of European Paper Industries WBCSD members BASF, Coca-Cola Europe
Target audience	Business, agriculture, tourism, urban areas and cities
Available material	Water Vision for Europe: www.ewp.eu/wp-content/uploads/2009/03/water-vision-for-europe.pdf Water Stewardship Newsletters: www.ewp.eu/projects/aquawareness/water-stewardship/newsletter
Key terms	Principles, criteria and indicators, assessment scheme, communication tools

Organizations⁶	The Nature Conservancy; The Pacific Institute; The Water Stewardship Initiative; WWF; Water Witness; Water Environment Federation®; The European Water Partnership.
Date of creation	June 2008
Key contacts	Jonathan Kaledin: jkaledin@tnc.org Matthew Wenban-Smith: mwenbansmith@oneworldstandards.com Andrew Murphy: Andrew.Murphy@wwfus.org
Website	www.allianceforwaterstewardship.org
Objectives	Promote responsible use of freshwater that is both socially beneficial and environmentally sustainable Establish a global enterprise that will define water stewardship standards and recognize large-scale water users and managers who meet those standards through a branded certification program that incorporates social, environmental and economic aspects of water use and management
Key activities	Development of the key elements of the certification program: <ul style="list-style-type: none"> • International standards with a focus on impacts of direct and indirect water use at the watershed level • Verification to determine whether these standards have been met • A global brand to allow users to demonstrate compliance • Training and education to promote achievement of water stewardship • Pilot testing and technical studies to refine the program through an iterative process
Geographic and sectoral focus	Global framework across industrial sectors at organizational and site levels
Approach	<ul style="list-style-type: none"> • Global inclusive platform open to all stakeholders • Voluntary program • Aims to be compatible with other standards/systems that address water use • Seeking stakeholder engagement in the design, development and implementation of the water stewardship program, including standards development, pilot testing standards and verification systems for certification
Timeline	AWS is building a water certification organization to be launched at the end of 2011.
Participants and Partners	Partnership with the Water Footprint Network: AWS aims to use the water footprint approach as a starting point for the development of water stewardship criteria.
Business involvement	AWS is actively seeking business participation in all aspects of the program.
Target audience	Industrial and agricultural water users, municipalities, water authorities
Available material	Overview: www.allianceforwaterstewardship.org/about_pdfs/AWS_StandardsWorkshop.pdf Summary of Water Stewardship Framework: www.allianceforwaterstewardship.org/about_pdfs/Home_Page/Global_Water_Roundtable/3-Summary_WS_Framework.pdf
Key terms	Water stewardship standards, impacts assessment, verification and certification

⁶ www.allianceforwaterstewardship.org/partners.html

BIER Water Footprint Working Group



Organization	The Beverage Industry Environmental Roundtable (BIER) is a coalition of 17 leading beverage industry companies and supporting partners working together to provide environmental sustainability leadership and guidance.
Date of creation	December 2009
Key contact	Tod Christensen: info@bierroundtable.com
Website	www.bierroundtable.com
Objectives	<ul style="list-style-type: none"> • Develop sector-specific guidelines for calculating the water footprint of a product or enterprise. • Inform and catalyze other existing initiatives by providing an in-depth analysis of sector-specific considerations as critical gaps are expected between a generic water footprint model and one that reflects unique aspects of water usage in the beverage sector.
Key activities	Building sector-specific guidelines will involve establishing common water footprinting boundaries, definitions and calculation methods, and tackling complex issues such as water usage data and impact gaps.
Geographic and sectoral focus	Global Beverage industry companies and suppliers
Approach	Collective voluntary effort led by business working in parallel with a number of organizations that are addressing the issue
Timeline	Working group scheduled to develop and publish guidelines in late 2010
Participants and partners	Working group open to considering partnership opportunities with governmental and non-governmental organizations during this development stage
Business involvement	List of members: www.bierroundtable.com/bier_members.html WBCSD members include The Coca-Cola Company and PepsiCo.
Target audience	Beverage industry companies, suppliers, supporting partners and related stakeholders
Available material	Under development Related information and updates available at www.bierroundtable.com/water_stewardship.html
Key terms	Beverage industry, water footprinting, water use, boundaries, definitions, calculation methods



Organization	CDP Water Disclosure is a program of the Carbon Disclosure Project, an independent not-for-profit organization holding the largest database of corporate climate change information in the world.
Date of creation	November 2009
Key contact	Marcus Norton: marcus.norton@cdproject.net
Website	www.cdproject.net/water-disclosure
Objectives	To help institutional investors better understand the business risks and opportunities associated with water scarcity and other water-related issues by increasing the availability of high quality information on this critical issue.
Key activities	Seeking disclosure from companies about their: <ul style="list-style-type: none"> • Water management and governance • Water-related risks and opportunities • Water withdrawals, discharges and intensity
Geographic and sector focus	In 2010 the questionnaire will be sent to 300 of the world's largest companies in water-intensive sectors/sectors subject to particular water-related risk. Other companies are also welcome to respond.
Approach	Corporate water data is collected annually through a questionnaire on behalf of institutional investors. Companies may chose to make their responses public, in which case they will be available to view at www.cdproject.net .
Timeline	Companies will respond to the questionnaire between April and July, and a report summarizing and analyzing their responses will be published and launched in Q4.
Participants and partners	Norges Bank Investment Management (NBIM) is the program's lead sponsor. Details of participating companies, signatory investors and other partners are available at www.cdproject.net/water-disclosure
Target audience	Institutional investors, business, government, other key stakeholders
Available material	<p>"The Case for Water Disclosure" which explains the rationale for the program and findings from a pilot in 2008 www.cdproject.net/en-US/Programmes/Documents/CDP_Water_Disclosure_PDF.pdf</p> <p>The 2010 questionnaire and guidance for companies responding to it will also be available at www.cdproject.net/water-disclosure.</p>
Key terms	Disclosure, institutional investors, reporting, risks and opportunities



Collecting the Drops: A Water Sustainability Planner



Organization	Global Environmental Management Initiative (GEMI®) , an organization of leading companies dedicated to fostering global environmental, health and safety excellence through the sharing of tools and information.
Date of creation	January 2007
Key contact	Amy Goldman: info@gemi.org
Website	www.gemi.org/waterplanner
Objectives	<p>Generate information that can be used to create short- and long-term water strategies, develop action plans and perform actions to improve water resource management within operations and the community.</p> <p>Provide tools and detailed guidance on:</p> <ul style="list-style-type: none"> The process for assessing the facility's specific water uses/needs in comparison to the availability of water in the region The impacts these operations poses on the available water resources The identification of factors that may pose risks for the operation's ability to produce
Key features	<p>The tool is structured around three modules:</p> <p>Facility water use and impact assessment program (module 1)</p> <p>Guidance for preparing a facility water block flow diagram and water balance requiring data on water supply, process/facility losses and total volumes discharged.</p> <p>Water management risk assessment (module 2)</p> <p>Web-based interactive questionnaire requiring input from the facility user on general water considerations and specific risk questions. Risk categories include: watershed; supply reliability; efficiency; compliance; supply economics and social context.</p> <p>Case examples and reference links including definitions of the terms used in the tool (module 3).</p>
Geographic and sectoral focus	Cross-sectoral with a focus on facility level and local/regional impacts.
Approach	Developed through a collaborative process by GEMI's Water Sustainability Group
Participants and partners	GEMI's Water Sustainability Group, i.e., 30 companies ⁷ from various sectors Support from the Institute for Water Resources
Business involvement	Project chaired by ConAgra Foods Inc. and WBCSD members The Coca-Cola Company and The Dow Chemical Company.
Target audience	Corporate facility staff or operation division staff
Available material	<p>Free web-based interactive tool: www.gemi.org/waterplanner</p> <p>Or download the PDF version: www.gemi.org/waterplanner/Documents/CollectingDrops.pdf</p> <p>Although the Planner is self-standing, facility users are encouraged to also consult "Connecting the Drops Towards Creative Water Strategies" (2002): www.gemi.org/water/</p>
Key terms	Facility level water use and impact assessment, risk assessment

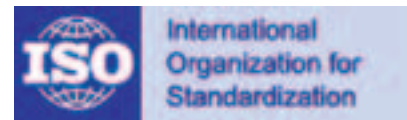
⁷ WBCSD members include: 3M, Duke Energy, DuPont, Novartis, Roche, The Coca-Cola Company, The Procter & Gamble Company and The Dow Chemical Company.

Organization	The Center for Sustainable Innovation , a non-profit corporation conducting research, development, training and consulting for, and with, companies interested in improving the sustainability performance of their operations.
Date of creation	January 2009
Key contact	Mark McElroy: mmcelroy@vermontel.net
Website	www.sustainableinnovation.org
Objectives	Measure the ecological sustainability of an organization's water use at specific locations or facilities by measuring consumption in the context of local hydrological and meteorological conditions.
Key features	<p>The tool assesses a facility's water use in light of local watershed, precipitation and population conditions, while taking into account the sources and sinks of water inflows and outflows, and the populations with whom resources must be shared.</p> <p>Quantitative scores are produced, which reflect the sustainability of the organization's water use (procedure not specified).</p> <p>Sustainability performance is determined by the rate of water use by the facility measured against the rate of renewable water supplies in the watershed(s) of interest, after allocating shares of available resources to specific facilities.</p> <p>Uses GIS technology to collect and analyze the local hydrological and demographic information at a watershed level in combination with site-specific datasets.</p>
Geographic and sectoral focus	Applicable globally and across industrial sectors with a focus on site and enterprise level measurement and reporting in mind
Approach	Usage of the tool is restricted to those that have engaged with the Center, for a fee, to provide training on its use. Use afterwards is free of charge.
Participants and partners	Co-developed with Acer GeoAnalytics in Vermont
Business involvement	First used at Agri-Mark, Inc. in the US at its Cabot Creamery Cooperative food processing plants in New England
Target audience	Corporate sustainability, facility and operations managers
Available material	<p>Description: www.sustainableinnovation.org/Corporate-Water-Gauge.pdf</p> <p>Frequently asked questions: www.sustainableinnovation.org/Water-Gauge-FAQs.pdf</p>
Key terms	Sustainability metric, water use, watershed



Organization	The Global Reporting Initiative™ (GRI), a multi-stakeholder governed institution collaborating to provide the global standards in sustainability reporting.
Date of creation	Third version of the sustainability reporting guidelines (G3) released in October 2006
Key contact	Sean Gilbert: gilbert@globalreporting.org
Website	www.globalreporting.org/ReportingFramework/G3Guidelines/
Objectives	Provide a standardized reporting format that gives guidelines and boundaries to the process of sustainability reporting and improves the comparability and credibility of information disclosed
Key activities	<p>Identification of water performance indicators</p> <p>G3 guidelines include:</p> <ul style="list-style-type: none"> • EN8: Total water withdrawal by source • EN9: Water sources significantly affected by withdrawal of water • EN10: Percentage of total volume of water recycled and reused • EN21: Total water discharge by quality and destination • EN25: Identity, size, protected status and biodiversity value of water bodies and related habitats significantly affected by the reporting organization’s discharges of water and runoff
Geographic and sectoral focus	Global and cross-sectoral
Approach	<ul style="list-style-type: none"> • Voluntary initiative • Multi-stakeholder network
Participants and partners	<p>GRI is a collaborating center of the United Nations Environment Programme.</p> <p>GRI has strategic relationships with a range of international bodies including the UN Global Compact (GC). G3 Guidelines can be used to produce the GC’s annually required Communication on Progress. The WBCSD Global Water Tool can be used to generate the G3 water indicators EN8, EN10 and EN21.</p> <p>A series of multi-stakeholder governance bodies that coordinate the formal components of the GRI network represent the institutional side of GRI. These include: Board of Directors; Stakeholder Council; Technical Advisory Committee. The organizational stakeholders are the hundreds of organizations and individuals who form the foundation of the governance structure.</p>
Business involvement	Reporting guidance developed by companies and non-industry stakeholders, including civil society, labor and others through a structured consensus-seeking process of dialogue
Target audience	Reporting organizations and those who use report information alike.
Available material	<p>The Sustainability Reporting Framework is freely available and consists of:</p> <ul style="list-style-type: none"> • Guidelines including principles and guidance on report content, quality and boundaries together with standards disclosures such as performance indicators • Indicator protocols providing further technical information • Sector Supplements (indicators for industry sectors)
Key terms	Water performance indicators, reporting, standard disclosures

Water footprint: Requirements and guidelines



Organization	International Organization for Standardization (ISO) , a global network of national standards institutes of 161 countries; WG8 under TC207/SC5 (ISO 14046).
Date of creation	June 2009
Key contact	Sebastien Humbert: sebastien.humbert@quantis-intl.com
Website	www.iso.org/iso/home.htm
Objectives	<ul style="list-style-type: none"> • Develop an international standard specifying requirements and guidelines to assess and report water footprint based on life cycle assessment • Provide developers of methods assessing water use with internationally accepted guidelines ensuring coherence with other ISO norms and environmental metrics to avoid confusion and reach synergies • Achieve consensus on important elements that any ISO-compliant method needs to address
Key activities	<ul style="list-style-type: none"> • Agree on terminology • Develop water accounting inventory • Identify requirements for impact assessments (for both screening and detailed assessments) • Identify rules for communication
Geographic and sectoral focus	Global and applicable to products, processes and organizations across all sectors
Approach	According to ISO standards development processes and procedures, i.e., through consensus building, industry wide and voluntary.
Timeline	2009-2011
Participants and partners	<p>Secretariat: Marcel Schulze, SNV - the Swiss Association for Standardization, Switzerland</p> <p>Convener: Sebastien Humbert (Quantis, Switzerland)</p> <p>Co-convener: Nydia Suppen (Centro de analisis de cyclo de vida y diseño sustentable, Mexico)</p> <p>~20 countries involved</p> <p>WBCSD, the Water Footprint Network and the Life Cycle Initiative invited as key contributors as a liaison member or as a national delegate (expert)</p>
Business involvement	Possible within the working group as a liaison member or as a national delegate
Target audience	Industries, political decision-makers, consultants and scientists assessing or using water footprint
Available material	Under development (first working document will be available Spring 2010).
Key terms	International water footprint standard, requirements and guidelines, inventory, impact assessment, communication, life cycle assessment



Strategic Water Management in the Minerals Industry



Organizations	The Ministerial Council on Mineral and Petroleum Resources (MCMPR) ⁸ and the Minerals Council of Australia (MCA) , which represents Australia's exploration, mining and minerals processing industry in its contribution to sustainable development and society.
Date of creation	2006
Key contacts	Melanie Stutsel, MCA; Kristina Ringwood, Rio Tinto Commonwealth Department of Resources, Energy and Tourism info@wateraccounting.net.au
Website	www.minerals.org.au/environment/water and www.wateraccounting.net.au
Objectives	Promote a strategic approach to water management at mining and processing sites so that water is more efficiently managed and valued as a vital business, community and environmental asset Inform business planning, support identification of risks and opportunities and provide high-level guidance on issues that should be addressed in developing and implementing a water strategy for business Provide a water accounting framework that enables enhanced communication, understanding, transparency, comparability and consistency regarding water use by minerals operations
Key features	Strategic issues to be considered are structured around four major themes: <ul style="list-style-type: none"> • Valuing water in its social, environmental and economic dimensions: guidance on how to reflect the true value of water in decision-making • Strategic water planning: guidance on primary elements to be included in a high-level water strategy and importance of contextual factors • Implementation: guidance on the development of site water management plans and balances to improve operational performance • Engaging stakeholders: principles for building relationships that generate mutually beneficial outcomes <p>Examples of companies applying the framework are presented.</p>
Geographic and sectoral focus	Australia Mining and minerals industrial sector at a site and corporate level
Approach	Developed by a multi-stakeholder working group composed of business, academia and regional/national government representatives, including a public consultation phase on the draft framework and pilot projects for water accounting.
Participants and partners	MCA - representing 85% of Australia's annual mineral output Regional and national governments representatives
Business involvement	Iluka Resources, Newcrest Mining, Newmont Australia, Xstrata and WBCSD members BHP Billiton and Rio Tinto
Target audience	<ul style="list-style-type: none"> • Corporate managers and planners responsible for providing strategic direction on water as input to business plans • Mine managers, water managers and environmental officers responsible for managing water programs and engaging with local communities • Regional stakeholders keen to better understand water use by minerals operations
Available material	<ul style="list-style-type: none"> • The Strategic Water Management Framework: www.minerals.org.au/__data/assets/pdf_file/0009/17595/Water_strategy_book.pdf • Leading Practice Sustainable Development Handbook for Water Use: www.ret.gov.au/sdmining • Water Accounting Framework for Minerals Operations: www.wateraccounting.net.au
Key terms	operational performance, risk management, strategic water planning, water accounting

⁸ The MCMPR is part of the Department of Resources, Energy and Tourism of the Australian Government.

UK Federation House Commitment to Water Efficiency

Organizations	The UK Food & Drink Federation (FDF) , representing the interests of the food and drink manufacturing industry, and Envirowise , a Government-funded program dedicated to putting the sustainable use of resources at the heart of UK business practice.
Date of creation	January 2008
Key contacts	Andrew Kuyk, Director of Sustainability and Competitiveness, FDF Simon Drury, Strategic Partnership Director, Envirowise fhc2020@envirowise.gov.uk
Website	www.fhc2020.co.uk
Objectives	Establish a strategic framework to support food and drink manufacturing companies to contribute to an industry-wide target to reduce water use (outside of that embedded in products themselves) by 20% by 2020 compared to 2007 in line with the target set by the UK Government's Food Industry Sustainability Strategy
Key activities	Key elements of the commitment include the: <ol style="list-style-type: none"> 1. Development of a 2007 baseline of water use 2. Assessment of water use at each manufacturing site 3. Development of site-specific action plans 4. Implementation of action plans 5. Provision of company annual water use data to Envirowise who will report collective progress
Geographic and sectoral focus	United Kingdom The food and drink manufacturing industry
Approach	<ul style="list-style-type: none"> • Public-private partnership to deliver on a governmental strategy • Voluntary time-bound commitment with quantified reduction target • Water use does not take into account water embedded in products
Timeline	2007 – 2020
Participants and partners	Food and drink industry in partnership with the UK Government
Business involvement	36 signatories including WBCSD members Unilever and PepsiCo. List of signatories: www.fhc2020.co.uk/fhc/cms/members/
Target audience	UK-based businesses in the food and drink manufacturing sector
Available material	UK Government Food Industry Sustainability Strategy (May 2006): www.defra.gov.uk/farm/policy/sustain/fiss/pdf/fiss2006.pdf Reducing water use within the Food and Drink Industry Progress Report: 2009 www.fhc2020.co.uk/fhc/cms/assets/Uploads/FHC-AnnualReport-final.pdf
Key terms	Water reduction target





Organization	The United Nations Global Compact , a strategic policy initiative for businesses that are committed to aligning their operations and strategies with 10 universally accepted principles in the areas of human rights, labor, environment and anti-corruption.
Date of creation	July 2007
Key contacts	Gavin Power: powerg@un.org Jason Morrison: jmorrison@pacinst.org
Website	www.unglobalcompact.org/Issues/Environment/CEO_Water_Mandate/
Objectives	Mobilize global business action and provide a strategic framework to help companies better manage their water-related impacts and business risks Assist companies in the development, implementation and disclosure of corporate water stewardship policies and practices based on the CEO Water Mandate's six key areas: direct operations; supply chain and watershed management; collective action; public policy; community engagement; transparency
Key activities	<ul style="list-style-type: none"> • Multi-stakeholder forums on challenging and timely water issues • Learning platform for best and emerging practices • Development of frameworks and guidance for salient issues such as corporate water disclosure, business engagement with water policy, and water and human rights • Support endorsers in their implementation of the Mandate's elements
Geographic and sectoral scope	Global and cross-sectoral focusing on operations, supply chains and watersheds
Approach	<ul style="list-style-type: none"> • Public-private partnership • Voluntary commitment • Requires endorsement of the Mandate by a company's CEO or equivalent and annual communication on progress • Yearly contributions are requested, but not required
Participants and partners	Over 60 signatories as of February 2010 from various industrial sectors and regions The UN Global Compact Office and Pacific Institute act as the Secretariat of the CEO Water Mandate.
Business involvement	WBCSD members include Baosteel, Bayer, Deloitte, The Dow Chemical Company, DSM, Firmenich, PepsiCo, PricewaterhouseCoopers, Royal Dutch Shell, Siemens, Stora Enso, Suez, Syngenta, The Coca-Cola Company and Unilever. Full list of signatories: www.unglobalcompact.org/issues/Environment/CEO_Water_Mandate/endorsingCEOs.html
Target audience	Global businesses
Available material	The CEO Water Mandate, its Preamble and Core Elements: www.unglobalcompact.org/docs/news_events/8.1/Ceo_water_mandate.pdf Constitution of the CEO Water Mandate: www.unglobalcompact.org/docs/issues_doc/Environment/ceo_water_mandate/Constitution_CEO_Water_Mandate.pdf Transparency Framework, October 2008: www.unglobalcompact.org/docs/issues_doc/Environment/ceo_water_mandate/Transparency_Framework_Phase_One.pdf Water Disclosure 2.0: Assessment of Current and Emerging Practices in Corporate Water Reporting, March 2009 www.unglobalcompact.org/docs/news_events/9.1_news_archives/2009_03_11/Water_Disclosure.pdf Summaries of working conferences: http://www.unglobalcompact.org/Issues/Environment/CEO_Water_Mandate/Working_Conferences.html
Key terms	Transparency, disclosure, public policy engagement, water and human rights

Organization	The Business Roundtable , an association of chief executive officers of leading US companies that innovates and advocates to help expand economic opportunity for all Americans.
Date of creation	September 2005
Key contact	info@businessroundtable.org
Website	waterbrief.businessroundtable.org/
Objectives	<p>Layout the case for business engagement on water sustainability and provide resources to help business take tangible actions now by answering key strategic questions on an array of water issues important to business</p> <ul style="list-style-type: none"> • Create awareness • Provide tools and framework for designing and implementing a sustainable water initiative
Key features	<p>The interactive educational website outlines:</p> <p>I. Strategic questions to ask about water</p> <ul style="list-style-type: none"> • Actions companies are taking • Water and its intensity in the business value chain • Corporate risks of water scarcity and water quality • Business strategies and tactics on water • Company action plan <p>II. Reasons to act</p> <ul style="list-style-type: none"> • Water scarcity and supply interruptions are increasing, and water quality is declining • Water-related risks are significant for business • Water is a business opportunity <p>III. Company actions</p> <p>IV. Water news</p> <p>V. Useful links</p>
Geographic and sectoral focus	Global and cross-sectoral
Approach	Developed through a collaborative process by members of the Business Roundtable
Participants and partners	35 companies representing various industrial sectors
Business involvement	WBCSD members include Accenture, Alcoa, American Electric Power, Caterpillar, The Coca-Cola Company, The Dow Chemical Company, Duke Energy, DuPont, General Electric, http://waterbrief.businessroundtable.org/Questions/Industry.aspx?guid=726a7d0b-4400-406c-9538-549315493a7a General Motors, ITT, The Procter & Gamble Company, United Technologies Corporation, Weyerhaeuser
Target audience	Business
Available material	The Water Brief and its related resources are accessible through a dedicated website: waterbrief.businessroundtable.org
Key terms	Strategic planning, risk management

Organizations	Founding partners include the International Finance Corporation, the Netherlands Water Partnership, Twente University, UNESCO Institute for Water Education, the Water Neutral Foundation, WBCSD and WWF.
Date of creation	October 2008
Key contacts	Derk Kuiper: derk.kuiper@waterfootprint.org Arjen Hoekstra: A.Y.hoekstra@ctw.utwente.nl
Website	www.waterfootprint.org
Objectives	Support the transition towards sustainable, fair and efficient use of freshwater resources worldwide by: <ul style="list-style-type: none"> • Advancing the water footprint concept - a spatially and temporally explicit indicator of direct and indirect water use • Increasing the water footprint awareness of communities, governments and businesses and their understanding of how consumption of goods and services and production chains relates to water use and impacts on freshwater systems • Encouraging forms of water governance that reduce the negative ecological and social impacts of the water footprint of communities, countries and businesses
Key activities	Standards development for water footprint accounting and sustainability assessment Practical tools to support people and organizations interested in water footprint accounting, sustainability assessment and reduction Guidelines on reduction of the negative impacts of water footprints Technical support to water footprint assessment pilots with government bodies, NGOs, businesses and other organizations Exchange, communication and dissemination of knowledge
Geographic and sectoral focus	Global and multi-sectoral
Approach	<ul style="list-style-type: none"> • Multi-stakeholder platform • Operates as an open source program • Voluntary program
Participants and partners	More than 90 partners, including academic institutions, NGOs, business, government agencies and international organizations Overview of all partners at: www.waterfootprint.org/?page=files/OverviewPartners Memorandum of Understanding with the Alliance for Water Stewardship clarifying scopes of work between both organizations
Business involvement	Cadbury, C&A, Dole, Nestlé, Renault, SABMiller, UPM Kymmene and WBCSD members Lafarge, Natura, PepsiCo, PricewaterhouseCoopers, Stora Enso, The Coca-Cola Company and Unilever.
Target audience	Individuals, businesses and countries
Available material	Hoekstra et al., 2009. <i>The Water Footprint Manual: Practical guide on Water Footprint Assessment</i> : www.waterfootprint.org/downloads/WaterFootprintManual2009.pdf
Key terms	Water footprint standards, accounting and sustainability assessment

Water Footprint, Neutrality and Efficiency Umbrella Project (WaFNE)

Organizations	The United Nations Environment Programme's Division of Technology, Industry and Economics (UNEP DTIE).
Date of creation	March 2009
Key contacts	Guido Sonnemann Guido.Sonnemann@unep.org
Website	http://www.unep.fr/en/about/index.htm
Objectives	<ul style="list-style-type: none"> • To enhance water efficiency and water quality management through the refinement and pilot testing of several water accounting methods and supporting management tools. • Encourage convergence of practice and compatibility among these methods
Key activities	<ul style="list-style-type: none"> • Map and refine methodologies and related management tools for the water footprint and neutrality concepts • Build capacity and raise awareness among the public and private sectors in order to apply water accounting and neutrality concepts on a greater scale and with greater consistency • Demonstrate the applicability of harmonized concepts in enhancing water efficiency and improving water quality
Geographic and sectoral focus	<ul style="list-style-type: none"> • High water impact and water dependent industry sectors used by their financiers and investors in due diligence and stock picking exercises; • Water-stressed / scarce regions used by public authorities in local water services and conservation operations
Approach	Partnerships with others working on water footprinting and pilot tests
Timeline	3 years (2009/10 – 2012/13)
Participants and partners	UN Global Compact/CEO Water Mandate, Water Footprint Network, UN Water, Society of Environmental Toxicology and Chemistry (SETAC)
Target audience	Water intensive industry sectors, local governments in water stressed / scarce regions and the financial sector.
Available material	Water accounting stocktaking/mapping exercise leading to a co-branded CEO Mandate and UNEP report (to be published in spring 2010).
Key terms	Water Footprint, Water Neutrality



Organization	The Water Neutral Foundation , a not for profit entity based in South Africa.
Date of creation	August 2008
Key contact	Pancho Ndebele: pancho@waterneutral.org
Website	www.waterneutral.org/calculator.asp
Objectives	Raise awareness and stimulate debate and action to proactively reduce the footprint that one presses on the water resources when visiting South Africa Demonstrate the water neutral concept's viability.
Key activities	Development of a water neutral offset calculator that quantifies the volumes of water used to produce goods by a traveler/tourist visiting South Africa on a daily basis while on holiday or business. The calculator is linked to a tool that calculates the offset price necessary for each unit of water footprint. The funds raised are then channeled to initiatives aimed at promoting sustainable water management practices within a watershed, water conservation, water efficiency and the provision of clean drinking water in rural and peri-urban communities.
Scope	South Africa Aims to export the tool to other countries and beyond individuals
Approach	Voluntary approach working with academia, research institutions, business and civil society
Participants and partners	Co-developers of the tool include Ashok Chapagain (WWF UK) and Arjen Hoekstra (University of Twente/Water Footprint Network)
Business involvement	Working with South Africa-based corporations to develop a pilot project aimed at reducing and offsetting the negative impacts of their water footprints on water stressed watersheds.
Target audience	Individuals (travelers to South Africa) Aims to expand the concept to corporations and other organizations
Available material	Hoekstra, A.Y. 2008. "Water Neutral: Reducing and Offsetting the Impacts of Water Footprints": http://www.waterfootprint.org/Reports/Report28-WaterNeutral.pdf
Key terms	Water neutral, water footprint, water offsets



Organization	The US Environmental Protection Agency (EPA) , which leads the nation’s environmental science, research, education and assessment efforts.
Date of creation	2006
Key contact(s)	Veronica Blette: blette.veronica@epa.gov Helpline: watersense@erg.com
Website	www.epa.gov/WaterSense/
Objectives	Protect future water supply by promoting and enhancing the market for water-efficient products, services and programs. Help customers differentiate between products in the marketplace, while ensuring product performance, through a certification mark – the WaterSense label. Reduce water and wastewater infrastructure costs.
Key activities	Development of the WaterSense product certification system including: <ul style="list-style-type: none"> • Establishment of water efficiency and performance criteria through an open process and stakeholder input • Certification and labeling of water-efficient products by EPA-licensed third-party certifying bodies; follow-up surveillance • Awareness-raising campaigns targeting consumers for uptake of differentiated products • Awards • Online registry of labeled products
Geographic and sectoral focus	United States Landscape irrigation professionals and manufacturers of water-using products; retailers and distributors; water utilities
Approach	Voluntary partnership program sponsored by the US EPA. In order to use the label, a company must sign a WaterSense partnership agreement EPA recognized certification organizations assess products and services against EPA water efficiency and performance criteria
Participants and partners	More than 1,600 partners including local water utilities, product manufacturers, irrigation professionals, retailers and distributors Local governments and state government agencies; environmental, non-governmental, trade and professional associations.
Business involvement	Product manufacturers, retailers, service providers
Target audience	Consumer and commercial audiences
Available material	WaterSense Program Guidelines and Product Certification System: www.epa.gov/watersense/partners/certification.html The WaterSense current quarterly update: www.epa.gov/watersense/about_us/current.html
Key terms	Product certification and labeling, water efficiency and performance criteria



Organization	The Water Stewardship Initiative (WSI).
Date of creation	November 2006
Key contacts	Michael Spencer: spencer@waterstewardshipinitiative.com Angus Kinnaid kinnaid@waterstewardshipinitiative.com
Website	www.waterstewardshipinitiative.com/
Objectives	Improve management, performance and impacts of major water users through commitment to a global water stewardship standard, credible verification process and strong brand that will identify and reward responsible water users Initiated by businesses interested in risk management and recognition for superior water performance; adopted "stewardship" model to recognize socially, economically and environmentally responsible freshwater usage
Key activities	<ul style="list-style-type: none"> • Establish widely endorsed standards for responsible and sustainable water use by major users • Define criteria and translate these into verification programs • Establish certification systems • Develop and promote a licensed brand identity system for certified users
Geographic and sectoral focus	Australia initially and then develop projects in the Asia Pacific region Cross-sectoral with a focus on high volume water users
Approach	Voluntary and multi-stakeholder program including a pilot process Seeking to establish a member-based entity that can generate on-going financial support to further drive the development and commercialization of water stewardship
Timeline	Pre-pilot study in June 2009, further pilot programs late 2009 early 2010
Participants and partners	Support from Landcare Australia, ⁹ the Australian Government's National Water Commission and Murray Darling Basin Authority; a wide range of Australian commercial sponsors (incl. South East Water, Westpac, Coca Cola Amatil, Foster's Group, Timbercorp) Founding partner of the international Alliance for Water Stewardship to ensure global consistency and alignment on responsible water use principles and criteria
Business involvement	Sector representation on WSI Interim Board, financial support and participation in forums and workshops to develop water standard
Target audience	High volume water users: agriculture, manufacturing, commercial buildings, institutional water users, major events, water retailers, catchment management authorities, forestry, construction, infrastructure and government
Available material	Introductory Brochure and Water Stewardship Options Paper (September 2008) upon request. 3 rd Water Stewardship Forum, Summary of Outcomes (October 2008): www.waterstewardshipinitiative.com/pdf_documents/WSF3_ForumReport_Oct08.pdf 2 nd Water Stewardship Forum, Summary of Outcomes (July 2007): www.waterstewardshipinitiative.com/pdf_documents/WSF_Summary_of_Outcomes.pdf Conceptual Operating Model: www.waterstewardshipinitiative.com/pdf_documents/What_is_Water_Stewardship.pdf
Key terms	Water stewardship, standards, certification, brand identity

⁹ www.landcareonline.com.au



Water Use Assessment within Life Cycle Assessment



Organization	Working Group under the auspices of the UNEP/Society of Environmental Toxicology and Chemistry (SETAC) Life Cycle Initiative , a partnership to enable users around the world to put life cycle thinking into effective practice.
Date of creation	August 2007
Key contacts	Emmanuelle Aoustin, Veolia Environnement: emmanuelle.aoustin@veolia.com Annette Koehler, ETH Zurich (Swiss Federal Institute of Technology): annette.koehler@ifu.baug.ethz.ch
Website	fr1.estis.net/sites/lcinit/
Objectives	To provide industrials with a coherent framework within which to measure and compare the environmental performance of products and operations regarding freshwater use and related environmental consequences by: <ul style="list-style-type: none"> • Developing indicators that measure the environmental impacts on human health, ecosystems and freshwater resources generated by freshwater use and depletion. • Integrating these indicators within the ISO 14040 standardized Life Cycle Assessment (LCA) framework that already provides a standardized carbon footprinting methodology. • Developing a multi-criteria assessment scheme within the LCA framework that allows industrials to benchmark the performances of products, processes and services on freshwater resources, human health and biodiversity protection.
Key activities	<ul style="list-style-type: none"> • Development of a consistent scheme for freshwater use accounting and reporting. • Modeling of the impacts generated by freshwater use depending on the geographical context (e.g., freshwater availability in the watershed). • Harmonization of the LCA scheme towards freshwater use accounting. • Application of the indicators on industrial case studies (e.g., water utilities, pulp and paper plants). • Communication & dissemination within the scientific community and industry.
Geographic and sectoral focus	Global and cross sectoral
Approach	Voluntary commitment of academic researchers, consulting agencies and industrials to research projects within a multi-stakeholder working group.
Participants and partners	Academics, research and consultancy organization and business Leaders: Veolia Environnement, ETH Zurich
Business involvement	Water treatment, pulp and paper, chemical and food industries
Target audience	Scientific community – Business
Available material	<ul style="list-style-type: none"> • Koehler, A. 2008. "Water use in LCA: Managing the Planet's Freshwater Resources". International Journal of LCA 13 (6): pp. 451-455. • Bayart, JB., Bulle, C., Deschênes, L., Margni, M., Pfister, S., Vince, F. and Koehler, A. 2008. "A Framework for Assessing Off-Stream Freshwater Use in LCA", accepted by International Journal of LCA. • Pfister, S., Koehler, A. and Hellweg, S. 2009. "Assessing the Environmental Impact of Freshwater Consumption in LCA", Environmental Science and Journal 43 (11): pp. 4098–4104.
Key words	Freshwater use and consumption, depletion of freshwater resources, environmental impacts, life cycle assessment

Organization	World Business Council for Sustainable Development (WBCSD) , a CEO-led global association of some 200 companies dealing exclusively with business and sustainable development.
Date of creation	August 2007, updated in March 2009
Key contact	Eva Zabey: zabey@wbcsd.org
Website	www.wbcsd.org/web/watertool.htm
Objectives	<ul style="list-style-type: none"> • Map a company’s water use and assess water risks relative to global operations and supply chain by comparing sites with validated water and sanitation data on a country and watershed basis • Establish relative water risks in a company’s portfolio to prioritize action now and in the future • Create an effective knowledge base for driving improved water consumption and efficiency • Enable effective communication with internal and external stakeholders
Key features	<p>The tool is composed of an Excel workbook, an online mapping system that plots site locations with external water datasets and spatial viewing via Google Earth interface.</p> <p>It generates automatic outputs including GRI water indicators, inventories (water consumption and efficiency), downloadable metrics charts with combined company and country watershed data and geographic mapping.</p> <p>The tool allows the user to enter water-related data for suppliers and includes staff presence when accounting for water use.</p>
Geographic and sectoral focus	Global and cross-sectoral
Approach	<ul style="list-style-type: none"> • Collective voluntary effort led by business in cooperation with NGOs, academia and global water data providers • Free of charge and easy to use • No need to register to use the tool
Participants and partners	Advisory board of 22 WBCSD member companies led by CH2M HILL, the Global Reporting Initiative, The Nature Conservancy, and data providers (UN FAO, WHO and UNICEF, WRI and the University of New Hampshire)
Business involvement	The advisory board represented multiple sectors of industry that developed, pilot-tested and used the tool ¹⁰
Target audience	Business and other organizations that operate in multiple countries
Available material	Excel file to download, flyer, generic PowerPoint presentation, company testimonials, flash animation
Key terms	Risk assessment, water inventory, efficiency metrics, GRI water performance indicators, maps, Google Earth

¹⁰ It included Air Products and Chemicals, Alcan, Alcoa, Anglo American, Borealis, CH2M HILL, ConocoPhillips, Degussa, The Dow Chemical Company, DuPont, GrupoNueva, Holcim, ITT, Kimberly Clark, Lafarge, PepsiCo, Petro-Canada, Rio Tinto, Sanyo, Shell, Suez, Syngenta, Unilever.

4. Companion glossary of water sustainability terms

In as much as water sustainability is a comparatively new and presently evolving concept, terminology used to describe these initiatives is not always commonly understood or consistently used. The lack of a common and accessible language with which to discuss and measure water sustainability and to consider the impacts of human water use on ecosystems and resources has been identified as an obstacle to progress toward sustainable water management. The WBCSD Secretariat, together with IUCN and technical input from NCASI, has therefore taken the initiative to begin development of a glossary of terms and definitions related to sustainable water management.

The glossary provided here includes terms divided into **three categories**:

- (1) Terms commonly used in water hydrology science
- (2) Terms and concepts with definitions associated uniquely to particular water initiatives, such as water footprint
- (3) Concepts or states of condition in water resource management – representing ideas and often used without a precise definition in mind (evolving understanding of their use), such as water consumption.

The terms and definitions are color-coded to indicate the above referenced categories. Where appropriate, references for the definitions are provided. Neither the list of terms or references for those terms should be considered exhaustive.

In this glossary, the authors intend to recognize terms commonly used in the water sustainability dialogue and to denote their specific or general meanings. Like the entire document, this glossary should be considered “living” and will be updated periodically as water sustainability terms evolve and/or become more consistent in their usage.

Those using the glossary are encouraged to provide feedback and suggestions (water@wbcsd.org). It is the authors’ hope that this glossary will be valuable to those practicing or entering the field of sustainable water management. The reader should also note that other glossaries exist, some of which are noted at the end of this section.



5. Organization of the glossary

Terms within the alphabetically arranged glossary fall into three categories. These categories are distinguished as follows:

blue	Terms common in hydrology science; definitions are drawn from Glossary of Hydrology (GH), UN World Water Assessment Program: http://hydrologie.org/glu/aglo.htm unless otherwise stated.
green	Terms and concepts with definitions associated uniquely to particular water initiatives.
red	Concepts or states of condition in water resource management. These terms represent ideas and are often used without a precise definition in mind.

Term	Definition	Source
abstraction	Removal of water from any source, either permanently or temporarily. Note: abstracted water may not actually be consumed. See water withdrawal	<i>GH</i>
acidification	Change in an environment's natural chemical balance caused by an increase in the concentration of acidic elements.	<i>European Environment Agency</i>
allocative efficiency	The allocation of water resources in a way that maximizes the net benefit attained through the use of water across a range of applications -- household consumption, food, production, consumer goods, employment and urbanization.	
aquifer	Permeable water-bearing formation capable of yielding exploitable quantities of water.	<i>GH</i>
Blue water	The liquid flowing in rivers, lakes and aquifers.	<i>SIWI, IFPRI, IUCN, IWMI 2005</i>
blue water footprint	The volume of surface and groundwater evaporated as a result of the production of the product or service. For example, for crop production, the "blue" component is defined as the sum of the evaporation of irrigation water from the field and the evaporation of water from irrigation canals and artificial storage reservoirs. For industrial production or services, the "blue" component is defined as the amount of water withdrawn from ground- or surface water that does not return to the system from which it came.	<i>Gerbens-Leenes and Hoekstra 2008</i>
boundary	The boundary for a sustainability report refers to the range of entities whose performance is covered in the organization's sustainability report	<i>GRI</i>
boundary	The limit or extent to which water data, indicators, or impacts are considered	
brackish water	Water containing salts at a concentration significantly less than that of sea water but in amounts that exceed normally acceptable standards for municipal, domestic and irrigation uses. The concentration of total dissolved salts is usually in the range 1,000 to 10,000 mg/l.	<i>GH</i>
catchment	Area having a common outlet for its surface runoff. Synonyms include: drainage area, river basin and watershed.	<i>GH</i>

consumption (of water)	<p>The term water “consumption” is neither consistently defined nor consistently used.</p> <p>In general it is meant to represent an amount of water that was used but not returned to its proximate source. Water evaporated, transpired, incorporated into products, crops or waste, consumed by man or livestock, or otherwise removed from the local resource is often defined as “consumed”. In some cases water that is polluted to an extent prohibiting its use by others wishing access is termed “consumption”.</p> <p>Also referred to as consumptive water use.</p>	
degradation	A concept related to the lowering in quality of a water body.	
degradative water use	Describes a quality change in water used and released back to the same watershed.	<i>Bayart et al. 2008</i>
depletion	Continued withdrawal of water from groundwater or other water body at a rate greater than the rate of replenishment.	<i>GH</i>
direct water use	Refers to the water used by a consumer or producer itself (i.e., water used at home; water used for producing, manufacturing and supporting activities). The term contrasts with “indirect water use”.	<i>Gerbens-Leenes and Hoekstra 2008</i>
drainage area	Area having a common outlet for its surface runoff. Synonyms include: catchment, river basin, and watershed.	<i>GH</i>
ecological footprint	A resource accounting tool that measures the amount of biologically productive land and sea area an individual, a region, all of humanity, or a human activity requires to produce the resources it consumes and absorb the waste it generates, and compares this measurement to how much land and sea area is available.	<i>Global Footprint Network</i>
ecosystem services	The benefits people obtain from ecosystems. These include provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation, and disease; supporting services such as soil formation and nutrient cycling; and cultural services such as recreational, spiritual, religious, and other non-material benefits. The classification of water as a provisioning service rather than a regulating service is debated, but this does not affect its general meaning.	<i>Millennium Ecosystem Assessment</i>
effluent	See water discharge.	<i>GH</i>
embedded water	See “virtual water”.	
embodied water	See “virtual water”.	
environmental flow	A concept related to the quality and quantity of water within any surface or subsurface water body that provides water flows sufficient to maintain ecosystem functions and the goods and services dependent on those functions.	<i>Dyson et al. 2003</i> <i>IUCN</i>

environmental water stress indicator	Measures the proportion of water withdrawal with respect to water available to human use. Water available to human use is equal to the total amount of water available in the basin minus the estimated environmental water demand (the water needed by the ecosystem to maintain its integrity). Basins with a water stress index above 0.4 are already considered, from an ecosystem perspective, as areas under environmental stress; basins with an indicator higher than 0.8, are considered highly-stressed.	<i>WRI1</i>
eutrophication	The slow, natural aging process during which a lake, estuary or bay evolves into a bog or marsh and eventually disappears. During the later stages of eutrophication the water body is choked by abundant plant life due to higher levels of nutritive compounds such as nitrogen and phosphorus. Human activities can accelerate the process.	<i>US EPA</i>
evapotranspiration	Quantity of water transferred from the soil to the atmosphere by evaporation and plant transpiration.	<i>GH</i>
fossil water	Water infiltrated into an aquifer during an ancient geological period under climatic and morphological conditions different from the present and stored since that time.	<i>GH</i>
freshwater	Naturally occurring water having a low concentration of salts, or generally accepted as suitable for abstraction and treatment to produce potable water.	<i>GH</i>
green water	Water in soils and vegetation in the form of soil moisture and evaporation.	<i>SIWI, IFPRI, IUCN, IWMI 2005</i>
green water footprint	The volume of rainwater and irrigated water that evaporated during the production process. This is mainly relevant for agricultural products (e.g., crops or trees) where it refers to the total rainwater evapotranspiration (from fields and plants).	<i>Gerbens-Leenes and Hoekstra 2008</i>
grey water	Water discharged from a process use that may be considered for recycle/reuse.	<i>GEMI</i>
grey water footprint	The volume of polluted water that associates with the production of goods and services. It is quantified as the volume of water that is required to dilute pollutants to such an extent that the quality of the ambient water remains above agreed water quality standards.	<i>Gerbens-Leenes and Hoekstra 2008</i>
groundwater	Subsurface water occupying the saturated zone.	<i>GH</i>
hidden water	See "virtual water".	
indirect water use	The water used behind the products consumed by a consumer or used as inputs by a producer (i.e., water used in the production and supply chain of the goods and services consumed; water used in a business's supply chain).	<i>Gerbens-Leenes and Hoekstra 2008</i>
in-stream water use	The use of water in situ (e.g., for a dam for hydroelectric power or navigational transport on a river).	<i>Bayart et al. 2008</i> <i>Owens 2002</i>

life cycle assessment (LCA)	Process to evaluate the environmental burdens associated with a product, process, or activity by identifying and quantifying energy and materials used and wastes released to the environment; to assess the impact of those energy and materials used and released to the environment; and to identify and evaluate opportunities to affect environmental improvements. The assessment includes the entire life cycle of the product, process or activity, encompassing, extracting and processing raw materials; manufacturing, transportation and distribution; use, reuse maintenance; recycling and final disposal.	SETAC
net green water footprint	The difference between the crop evaporation and the natural evaporation. This term was derived from the green water footprint to reflect the fact that, although the growth of crops increases evaporation, there would remain a substantial evaporative demand from the land were the crops not cultivated (through naturally occurring vegetation).	SABMiller and WWF-UK 2009
non-renewable water resources	Groundwater bodies (deep aquifers) that have a negligible rate of recharge on the human time-scale and thus can be considered as non-renewable. While renewable water resources are expressed in flows, non-renewable water resources have to be expressed in quantity (stock). See also fossil water.	FAO
off-stream freshwater use	The use of water that requires removal from the natural body of water or groundwater aquifer (e.g., pumping or diversion for municipal, agricultural or industrial uses).	Bayart et al. 2008 Owens 2002
performance indicator	Qualitative or quantitative information about results or outcomes associated with and effort that is comparable and demonstrates change over time.	GRI
pollutant/pollution	A substance/the addition of a substance that impairs the suitability of water for a considered purpose.	GH
precipitation	(1) Liquid or solid products of the condensation of water vapor falling from clouds or deposited from air on the ground. (2) Amount of precipitation (as defined under (1)) on a unit of horizontal surface per unit time.	GH
recycled water/reused water/reclaimed water	See water recycling/reuse	
renewable water	A concept referring to water quantities that are maintained by the hydrologic cycle and thus renewed on a predictable basis.	FAO
reservoir	Body of water, either natural or man-made, used for storage, regulation and control of water resources.	GH
resilience	(1) A measure of the magnitude of disturbance that can be absorbed before the ecosystem changes its structure by changing the variables and processes that control behavior. (2) The measure of resistance to disturbance and the speed of return to the equilibrium state of an ecosystem.	European Environment Agency
return flow	Any flow that returns to a stream channel or to the groundwater after use. Note: the quality, quantity, temperature and point of return to a watershed or aquifer compared to pre-withdrawal conditions are important elements of sustainability evaluation.	GH GEMI

river basin	Area having a common outlet for its surface runoff. Synonyms include: catchment, drainage area and watershed.	<i>GH</i>
runoff	The part of precipitation that appears as streamflow.	<i>GH</i>
seepage	(1) Slow movement of water in a porous medium. (2) Loss of water by infiltration into the soil from a canal or other body of water. (3) Water emerging from a rock or the ground along a line or surface.	<i>GH</i>
streamflow	General term for water flowing in a stream or river channel.	<i>GH</i>
surface water	Water that flows over or is stored on the ground surface.	<i>GH</i>
sustainable water resource	The withdrawals are taken from renewable sources; the withdrawal is within the renewal capacity of that source; and then the disposition or return of the water allows others to use the water in the original river basin or watershed, usually downstream.	<i>Owens 2002</i>
toxic/toxicity	The degree to which a substance or mixture of substances can harm humans or animals. Acute toxicity involves harmful effects in an organism through a single or short-term exposure. Chronic toxicity is the ability of a substance or mixture of substances to cause harmful effects over an extended period, usually upon repeated or continuous exposure sometimes lasting for the entire life of the exposed organism.	<i>US EPA, European Environment Agency</i>
treated wastewater	Water that has received primary, secondary or advanced treatment to reduce its levels of pollutants or health hazards and is subsequently released back to the environment. It can also be a form of effluent.	
treated water	Water that has been cleaned and/or disinfected, usually for purposes of producing potable water.	
virtual water	The virtual water content of a product is the volume of water used to produce the product, measured at the place where the product was actually produced (production site specific definition). The virtual water content of a product can also be defined as the volume of water that would have been required to produce the product in the place where the product is consumed (consumption site specific definition). The adjective 'virtual' refers to the fact that most of the water used to produce a product is in the end not contained in the product. The real water content of products is generally negligible if compared to the virtual water content. Can also be referred to as "embedded", "embodied" or "hidden" water.	<i>Allan 1996</i>
wastewater	Water that is of no further immediate value to the purpose for which it was used or in the pursuit of which it was produced because of its quality, quantity or time of occurrence. However, wastewater from one user can be a potential supply to a user elsewhere. Cooling water is not considered to be wastewater.	<i>United Nations Food and Agriculture Organization</i>
watershed	Area having a common outlet for its surface runoff. Synonyms include: catchment, drainage area, and river basin.	<i>GH</i>

water allocation	In a hydrologic system in which there are multiple uses or demands for water, the process of assigning specific amounts of water to be devoted to a given purpose or use.	
water availability	A concept expressing the amount of water that is accessible at a location.	
water balance	Inventory of water based on the principle that during a certain time interval, the total water gain to a given catchment area or body of water must equal the total water loss plus the net change in storage in the catchment or body of water.	<i>GH</i>
water consumption	See “consumption (of water)”.	
water conservation	The practice of minimizing the use of water and/or the consumption of water.	
water discharge	(1) Liquid flowing out of a container or other system. (2) Water or wastewater flowing out of a reservoir or treatment plant. (3) Outflowing branch of a main stream or lake.	<i>GH</i>
water demand	Actual quantity of water required for various needs over a given period as conditioned by economic, environmental and/or social factors.	
water efficiency	Generally, the ratio of water actually used for an intended purpose and the amount of water applied for that purpose.	
water footprint	An indicator of water use that looks at both direct and indirect water use. The water footprint of a business is the volume of freshwater used to produce its goods and services. Water use is measured in terms of water volumes consumed (evaporated) and/or polluted per unit of time. The footprint includes green, blue and grey water components defined elsewhere in this glossary. It is a geographically explicit indicator, not only showing volumes of water use and pollution, but also the locations.	<i>Gerbens-Leenes and Hoekstra 2008</i>
water footprint accounting	The step in water footprint assessment that refers to collecting factual, empirical data on water footprints with a scope and depth.	<i>Hoekstra et al. 2009</i>
water footprint assessment	Quantifying a water footprint, assessing its impacts and formulating a response. The assessment includes four phases: setting goals and scope; water footprint accounting; water footprint sustainability assessment; and water footprint response formulation.	<i>Hoekstra et al. 2009</i>
water footprint sustainability assessment	Assessing the sustainability of a water footprint from an environmental, social and economic perspective, at local, river basin as well as global level.	<i>Hoekstra et al. 2009</i>
water harvesting	The process of collecting and concentrating rainfall as runoff from a larger catchment area to be used in a smaller area. The collected water is either directly applied to the cropping area and stored in the soil profile for immediate uptake by the crop or stored in a water reservoir for future productive use.	<i>IWMI</i>
water intensity	Usually taken to be the ratio between a process, product, business, or human freshwater use and a defined unit of production or population. In some circumstances “water consumption” is substituted for “water use”.	

water loss	A conceptual term referring to water that escapes from a system due either to natural or anthropogenic causes.	
water neutral/ water neutrality	The term relates to reducing and offsetting the impacts of “water footprints”. To achieve “neutrality”, the water footprint of an activity is reduced as much as reasonably possible and offsets are then made to the negative externalities of the remaining water footprint.	<i>Hoekstra 2008</i>
water offsets	Offsetting the negative impacts of a water footprint by investing in a more sustainable and equitable use of water in the hydrological units in which the impacts of the remaining water footprint are located.	<i>Hoekstra 2008</i>
water positive/ positive water balance	To save and replenish more water in its plants and communities than the total water it uses in a country. A positive water balance occurs when the credits (in-plant water recharge and harvesting, water recharged through community programs, and savings through agricultural interventions) are greater than the debits (total water used in manufacturing process).	<i>PepsiCo</i>
water poverty index	Measures, for a given country, the impact of water scarcity and water provision on human populations. The index is a number between 0 and 100, where a low score indicates water poverty and a high score indicates good water provision. This index is the culmination of an interdisciplinary approach that combines both the physical quantities relating to water availability and the socioeconomic factors relating to poverty to produce an indicator that addresses the diverse factors that affect water resource management. It is comprised of five component indices: resources, access, capacity, use and environment.	<i>Sullivan 2002</i>
water quality	Water quality refers to the physical, chemical, biological and organoleptic (taste-related) properties of water.	<i>OECD</i>
water recycling/reuse reclaimed water	Terms used to generally describe the reuse of water for purposes either similar to or different from the first use. The term “recycled water” is most often used to describe water reuse in the same or similar processes. The term “reclaimed water” often applies to water that is used for a secondary purpose requiring a lower quality level as compared to the first use.	
water recycling/reuse	The act of processing used water/wastewater through another cycle before discharge to final treatment and/or discharge to the environment. In general, there are three types of water recycling/reuse: <ol style="list-style-type: none"> 1. Wastewater recycled back in the same process or higher use of recycled water in the process cycle 2. Wastewater recycled/reused in a different process, but within the same facility 3. Wastewater reused at another of the reporting organization’s facilities. 	<i>GRI</i>
water rights	Governmental or other entitlements allowing the access, use or management of water resources.	

water scarcity water shortage water stress	<p>Terms such as water shortage, scarcity and stress are commonly used interchangeably. They all related to an excess of demand over available supply.</p> <p>Water shortage describes a state where levels of water supply do not meet minimum levels necessary for basic needs. Water scarcity is a more relative concept describing the relationship between demand for water and its availability. And water stress would be the symptomatic consequence of scarcity.</p>	
water scarcity	<p>Physical water scarcity occurs when the demand outstrips the lands ability to provide the needed water (implying that dry areas are not necessarily water scarce)</p> <p>Economic water scarcity results from insufficient human capacity or financial resources to provide water</p>	<i>IWMI</i>
water shortage	When annual water supplies are below 1,000 cubic meters per person, producing chronic shortages of freshwater and subsequent negative effects on food production, economic development and ecosystem health.	<i>WRI2</i>
water stress	When a country's annual water supplies are below 1,700 cubic meters per person and are characterized by periodic water shortages.	<i>WRI2</i>
water stress index	Ranging from 0 to 1, indicates the proportion of consumptive water use that deprives other users of freshwater. Weighs water consumption as a function of water scarcity.	<i>Pfister et al. 2009</i>
water supply	See "water availability".	
water trading	A concept of water transfer and use borne out of increased demand by urban populations for water whereby a holder of water rights is allowed to sell or lease those rights.	
water use	Refers to use of water by agriculture, industry, energy production and households, including in-stream uses such as fishing, recreation, transportation and waste disposal.	<i>OECD</i>
water withdrawal	Removal of water from any source, either permanently or temporarily. See water abstraction.	<i>GH</i>

Other glossaries

Aquastat: FAO's Information System on Water and Agriculture: <http://www.fao.org/nr/water/aquastat/glossary/index.jsp>

European Environment Agency Environmental Terminology and Discovery Service: <http://glossary.eea.europa.eu>

Glossary of Hydrology, UN Word Water Assessment Program: <http://hydrologie.org/glu/aglo.htm>

OECD Glossary of Statistical Terms: <http://stats.oecd.org/glossary/index.htm>

The Water Footprint Network Online Glossary: <http://www.waterfootprint.org/?page=files/Glossary>

UNDP Water Wiki: http://waterwiki.net/index.php/Concepts/_/Definitions/_/Glossary

US EPA Glossary: www.epa.gov/OCEPATERMS

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[WRI2] World Resources Institute, 2002, *Drylands, People, and Ecosystem Goods and Services: A Web-based Geospatial Analysis*, accessed 22 June 2009. http://earthtrends.wri.org/pdf_library/maps/drymap28.pdf

Annex: submission / update form

We are committed to keeping this overview up to date. If you want to suggest a new initiative or update information concerning an initiative that is already included in the document, please fill in the form below and return it either by e-mail to water@wbcSD.org, with water as the subject, or by fax to +41 (0)22 839 3131.



The WBCSD water project core team, together with IUCN, will review your submission and decide whether it fits within the scope of the initiatives targeted by this overview, i.e., business-relevant initiatives that are addressing the challenge of better defining sustainable water management. In particular:

- Tools that *support the identification of risks and opportunities* related to water use and impacts
- Initiatives and tools that aim to help business *measure water use and assess water-related impacts*
- Approaches to *developing response options*, addressing questions such as how to report, what to disclose and how to recognize responsible water managers through certification schemes.

Name	
Date of creation	
Organization	
Key contact	
Website	
Objectives	
Key activities	
Scope	
Approach	
Timeline	
Participants and partners	
Business involvement	
Target audience	
Available material	
Key terms	

MANY THANKS
We will keep you informed.



