

WATER FOOTPRINT WORKING GROUP

AN OVERVIEW

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1. Introduction

1.1 Water is a necessity of life for humans and ecosystems and a basic input for the operations of many public and private organizations. Water resources face serious challenges around the world and water conservation, its equitable distribution and the reduction of surface and groundwater pollution are global priorities embraced by a number of public and private sector organizations. The shared challenge of better understanding water footprints and their impacts, accounting for fresh water consumption, mitigating local impacts, and promoting good water governance worldwide, led to the first meeting¹ of what is now called the Water Footprint Working Group (WFWG).

1.2 Since 2007 this informal - and expanding -- group has been working individually and collaboratively to develop and pilot the concept of water footprints.² The WFWG participants are seeking to develop the water footprint metric as a meaningful, rigorous and practical accounting and policy tool in order to promote good water governance. The concept can be applied to individual products, businesses, individuals and communities and can be used as a building block towards understanding the impacts of water use, mitigating impacts through reduction and offsetting and responsible water management, and communication on learnings and performance towards sustainable water management.

1.3 With a view both to presenting full transparency on the operations of the WFWG and to inviting participation in the WFWG process, this paper provides an overview of the present state of play in the thinking and operation of the WFWG. It outlines the genesis of the WFWG, including the technical evolution of the water footprint concept; the group's objectives and activities, and the WFWG participatory process. Finally, this overview offers guidance to readers who want more information about the concept and application of water footprints and/or want to participate in the WFWG process.

2. Formation of the WFWG

2.1 Drawn together by a shared interest³ in exploring the concept of '*water neutrality*'⁴ and promoting global water stewardship, a small group of researchers

¹ See Appendix B for a list of organizations represented at meetings of the WFWG to date

² The water footprint was first introduced by Hoekstra and Hung (2002) and further developed by Hoekstra and Chapagain (2007, 2008).

³ A number of the participant organizations are actively engaged in related efforts outside of their participation in the WFWG.

⁴ For a comprehensive discussion of water neutrality, see Hoekstra, A.Y., "Water Neutral: Reducing and Offsetting the Impacts of Water Footprints," Research Report Series No. 28, UNESCO-IHE, March 2008.

and environmental managers from diverse organizations⁵ met in September 2007 and formed what is now called the Water Footprint Working Group (WFWG).⁶

2.2 The goal of the WFWG at its first meeting was to collect ideas concerning the concept of water neutrality and to consider how these ideas might be developed during the next several months into a credible and open process. An output of the group's initial discussions was a concept paper on water neutrality⁷ that was circulated for comment to a wider network with a view to increasing interest in, and input to, the WFWG process.

Water Neutrality: A Concept Paper

The WFWG formally launched the term 'water neutrality' in a discussion paper that generated a wealth of interest and comments that ranged from 'a term that can capture people's attention' to 'completely unacceptable' and 'self serving for companies'.

Interpreted in a strict sense, it is impossible to be water neutral as water consumption cannot be reduced to zero, there being no alternative to water for living organisms.

Water Neutrality Project, Synthesis Report of feedback, scope, objectives and next steps, WFWG, 2008.

2.3 In exploring the concept of water neutrality, participants debated that 'water neutral' generally does not mean that water use is brought down to zero, but it means "reducing the footprint of an individual or an entity" as much as possible and that "the remaining impacts are compensated (offset) in a meaningful way."⁸ Compensation, in turn, can be achieved by contributing to (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.⁹

The water footprint methodology offers "a conceptually sound basis for an accounting system that can capture a variety of different consumptive uses of water – direct and virtual – in a uniform, consolidated metric."

⁵ Initial participants in the WFWG include representatives from: The Coca-Cola Company, Nestle, Emvelo Group/Water Neutral, Worldwide Fund for Nature (WWF), UNESCO-IHE Institute for Water Education, University of Twente, World Business Council for Sustainable Development (WBCSD)/Aquafed/Suez. See also Appendix B for list of organizations represented at WFWG meetings.

⁶ The Working Group was initially called the "Water Neutrality Group". This name was subject to on-going debate and ultimately changed to the "Water Footprint Working Group."

⁷ Gerbens-Leenes, Hoekstra (Twente University); Holland, Orr (WWF), Koch (The Coca-Cola Company), Moss (WBCSD), Ndebele (Water Neutral /Emvelo Group), Ronteltap, de Ruyter van Stevenink (UNESCO-IHE), "Water Neutrality: A Concept Paper," 20 November, 2007.

⁸ WFWG Minutes of Meeting #1, 12 September, 2007.

⁹ Hoekstra, A.K., "Water Neutral: reducing and offsetting the impacts of water footprints," Value of Water Research Report Series No. 28, UNESCO-IHE, March 2008.

2.4 Responses to the group’s concept paper on water neutrality supported the further development of water footprint accounting and methodology while urging the WFWG to clarify how the concept fits within the broader umbrella of work underway to advance sustainable water resource management.

2.5 There also was a call for a clear definition of the terms used¹⁰ and for measurement methodologies to take into account the environmental, social and economic aspects of water. Concrete examples, it was proposed, would help build interest and understanding of the water neutrality concept.

2.6 The wealth of interest and comments generated by the discussion paper on Water Neutrality underlined the need for further research and development of the water footprint concept and helped also to clarify and define the group’s objectives going forward. Further, because of the debate and concerns regarding the term “water neutral”, the group dropped the use of the water neutral name and focused instead on the key aspects of water footprint accounting standards; understanding water footprint impacts, and ‘offsetting’ residual negative impacts of water footprints.

2.7 Responses were summarized in a synthesis report and triggered the development of two key papers that were independently published by the University of Twente: one on water neutrality¹¹ and the other on business water footprint accounting.¹²

3. Technical Evolution

3.1 Water footprint analysis¹³ began with an exploration of the global dimension of water as a natural resource. Traditionally considered a local issue or watershed issue, the global dimension of water resource management and the relevance of the structure of the global economy have been largely ignored by the water science and policy community.¹⁴

Water Footprint in Context

The concept of measuring a footprint in environmental sciences is not new. The water footprint concept is part of a larger family of concepts that have been developed in the environmental sciences over the past decade. The ecological footprint is a measure of the use of bio-productive space (hectares). The carbon footprint measures energy use in terms of the volume of carbon dioxide emissions (tonnes). The water footprint measures water use (in cubic meters).

Hoekstra (2008)

A second point of departure for the WFWG in the evolution of the water

¹⁰ For a comprehensive Glossary of Terms see: Hoekstra, A.Y., “Water Neutral: Reducing and Offsetting the Impacts of Water Footprints,” op.cit.

¹¹ Hoekstra, A.Y., “Water Neutral: Reducing and Offsetting the Impacts of Water Footprints,” op.cit.

¹² Gerbens-Leenes, P.W., Hoekstra, A.Y., “Business Water Footprint Accounting: A tool to assess how production of goods and services impacts on freshwater resources worldwide,” Research Report Series No. 27, UNESCO-IHE, March 2008.

¹³ See Hoekstra, A.J., Water Neutral, op.cit. See also Note 3, above.

¹⁴ Ibid.

footprint concept was the importance of human consumption as an end point of water use. The supply chain approach, advocated by WFWG participants at their first meeting, addresses both of these concerns. This approach exposes the link between human consumption and water use and also “maps the link between locally consumed or produced products and global appropriation of water resources, something that the classic [‘water withdrawal’] indicator cannot do.”¹⁵

3.2 As discussed at length by WFWG participants, an important challenge in developing the water footprint accounting methodology is to determine who is responsible for what level of impact, and what they can do to mitigate it.¹⁶

3.3 Within the WFWG, the water footprint is depicted as a volumetric measure of water use that is geographically defined and specifies the type of water use (green, blue, gray), reflecting both direct (operational) and indirect (supply chain) water use, but not reflecting the impact the volume has on ecosystems or other water users. The impact of water used depends on the local effects at the point where water is used.¹⁷

3.4 As interest in the water footprint concept has increased over the past few years, so too has interest peaked in what consumers and businesses can do to reduce (the impact of) their water footprint. The WFWG is working to translate the more theoretical water footprint concept into measurement tools and guidelines that are practical, applicable and generic. For this the WFWG has divided the concept into three sub-components to further the practical application of water footprint methodology: i) Water footprint accounting, ii) social, environmental and economical impact assessment of water footprints, and iii) water footprint impact mitigation through water use reductions and offsetting.

Water Footprint Measure

*The water footprint provides a **volumetric** measure of water resource in a specific **place**. To understand **impact** we need to assess against renewable resource availability, taking into account quantity, quality, distribution and timing. **Measures** must then be designed/taken in order to manage or reduce that impact.*

WFWG Minutes Meeting #3 (2008)

3.5 The WFWG discussions and consultations have raised a number of questions that will be addressed under these three headings. Examples include: how to assess impacts of water footprints, taking into account the multiple dimensions of water: environmental, social and economic; how much reduction of footprints can be reasonably expected; who is responsible for which part of supply chain water footprints; how to ensure that double counting does not occur; what is a valid offset; and who determines the validity of assets.

¹⁵ Ibid.

¹⁶ For a full discussion of the challenge put forward by the WFWG of developing an accounting methodology, including allocating responsibility as a percentage of total water impact, see Gerbens-Leenes, P.W., Hoekstra, A.Y., “Business water Footprint Accounting...” op.cit.

¹⁷ As summarized by Kuiper, Derk, “The Water Footprint Working Group,” presentation at the WBCSD FairWater Stewardship Workshop, June 17-18, 2008. For a summary of the WFWG’s discussion on what the water footprint measures, see Minutes of Meeting on Water Neutrality, 12 September 2007.

4. Goals, Objectives and Activities

4.1 The WFWG supports the sustainable and equitable use of freshwater resources worldwide by:

- a. Advancing the water footprint as an accounting and policy tool to quantify the relationship between goods and services and their impacts on freshwater resource use, and
- b. Promoting good water governance in order to reduce the negative impacts of water footprints of individuals, businesses, communities, and countries.

4.2 To help focus the activities of the group, the WFWG translated its goals into key objectives and activities for the medium- and short-term:

4.2.1 Objectives

- Promote the mitigation of the water footprint impacts of governments, businesses and individuals;
- Promote good water stewardship and governance by government, business, and individuals as a way to address their water footprint impacts;
- Increase the general understanding of water footprints and their impacts and stimulate positive action among relevant constituencies.

4.2.2 Activities:

4.2.2.1 Develop and promote water footprint accounting standards

Pilot the water footprint accounting methodology in key sectors to inform and refine the water footprint accounting tool. The pilots will be conducted with the assistance of private sector WFWG participants and other stakeholders. The aim is to define and roll out a roadmap for establishing water footprint accounting standards, leveraging other water-related standards, certification and multi-stakeholder initiatives. Publish a water footprint accounting tool.

- *Pilot water footprint accounting methodology in key sectors*
- *Publish water footprint accounting tool*

4.2.2.2 Develop and promote guidelines to measure impacts of water footprints

Draft a framework for the assessment and measurement of water footprint impacts on water resources and subsequently draft guidelines for measuring those impacts. Liaise with stakeholders that are conducting research on impact assessment of water use

- *Publish paper on measuring impacts of water footprints*

4.2.2.3 Explore methodologies for water footprint impact mitigation through water footprint reduction and offsetting

Research and define approaches to mitigate or 'offset' negative water footprint impacts. A research paper is currently underway to review existing water offset and trading schemes and to learn from relevant carbon offset initiatives.

- *Publish paper on water offsetting*
- *Produce draft framework for water offsetting*

4.2.2.4 Explore how the water footprint measures and tools fit within the broader framework of sustainable water management.

Liaise and debate with other water governance and management initiatives to start defining the place of the water footprint concept in sustainable water management practices.

- *Publish paper on water footprint accounting in the framework of sustainable water management*
- *Publish paper on measuring impacts of water footprints*

4.2.2.5 Communicate, network with and learn from other processes and platforms.

Outputs and findings from the pilot projects and research initiatives will be shared with the broader sustainable water resource management community. It is the goal of the WFWG to be transparent in:

- *defining work processes;*
- *soliciting input and engagement of a wide community of stakeholders including NGOs, government, and private sector; and*
- *promoting the development and adoption of water footprint accounting standards.*

To this end, the WFWG welcomes participation of key constituencies in the working group and is reaching out to existing organizations, including the World Business Council for Sustainable Development, CEO Water Mandate, Alliance for Water Stewardship, and WEF to consult, review, engage and advance the agenda of the WFWG. Technical papers, tools, position and discussion papers will support these efforts.

- *Promote water footprint accounting standards*
- *Engage the participation of key constituencies in the WFWG*

5. Participatory Process

5.1 As highlighted by respondents to the WFWG's initial discussion paper:

There is need for a multi-stakeholder process and stakeholder engagement should be expanded to have better representation of geographies and relevant groups. Also, the process will need to explore and set up the relevant linkages with other initiatives.

5.2 WFWG activities are directed towards establishing scientifically sound, tested and actionable methodologies and standards and promoting their broad application by business, government, communities and individuals. All activities are funded by contributions from corporate and NGO participants and are taking place in an open and inclusive multi-stakeholder environment.

5.3 Coordinated by a consulting project manager,¹⁸ the WFWG conducts its work through physical meetings that are supplemented with teleconferences and email exchanges. The group strives to be transparent and encourages participation and representation. To foster constructive, open debate, the process is governed by Chatham House rules and documents and outputs are open source. The group occasionally commissions outside experts to conduct research and develop concepts.

5.4 In addition to fostering collaboration among its own participants (Appendix B) the WFWG also is actively collaborating and coordinating with external efforts to advance the water footprint concept in the sustainable water management agenda. Among others, the WFWG is engaging with the WBSCSD FairWater Stewardship initiative,¹⁹ the CEO Water Mandate, TNC Blue Water Certification initiative, the Alliance for Water Stewardship and is well represented during the Stockholm Water Week. At the Fairwater workshop the WFWG has committed to develop a plan to share information on existing metrics and measurement tools and, through participating companies, will pilot the implementation of measurement tools.

5.5 While reaching out to promote collaboration has proven successful in engaging NGOs and the corporate sector, the WFWG has had limited success in engaging government entities. Participants acknowledge that this is an important challenge to address if the group is to succeed in promoting good water governance.

5.6 The WFWG currently operates as an informal and open process, in order to remain flexible and responsive to participant interests and goals. Overtime, the group may look for a host institution to serve as a home for the process.

6. Want to know more?

6.1 Individuals and organizations interested to learn more about the work of the WFWG on water footprint, impact assessment and impact mitigation are invited to contact with the WFWG through its project manager Derk Kuiper at derk@goodstuffinternational.com.

¹⁸ The WFWG's Project Manager is Derk Kuiper, Good Stuff International, derk@goodstuffinternational.com

¹⁹ FairWater Stewardship Workshop Report, Final Summary, WBCSD, 28 July 2008.

6.2 Following broad guidelines, the WFWG offers a process and platform for mutually beneficial exchange of information and lessons.

6.3 Readers also are invited to join the WFWG's email list by contacting the project manager, derk@goodstuffinternational.com.

6.4 To learn more about the theory and concepts behind the tools and guidelines that the WFWG is developing, readers are encouraged to consult the University of Twente and UNESCO-IHE's list of scientific and technical papers on the subject at <http://www.waterfootprint.org/?page=files/Publications>.

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Appendix A: Select Bibliography

Water Neutrality Project: Water neutrality – A concept paper. November 2007.

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A full bibliographical list can be found at: <http://www.waterfootprint.org/?page=files/Publications>

Appendix B: WFWG Participation

<p>Meeting #1: 12 September, 2007 Host: WWF, Netherlands</p> <p>Twente University Water Neutral The Coca-Cola Company UNESCO-IHE Aquafed/WBCSD WWF</p>	<p>Meeting #2: 22 January, 2008 Host: UNESCO-IHE Institute of Water Education, Deft, Netherlands</p> <p>Twente University Emvelo UNESCO-IHI The Coca-Cola Company Nestle Aquafed/WBCSD Good Stuff International WWF</p>
<p>Meeting #3: 17-18 April 2008 Host: Suez, Paris, France</p> <p>Nestle World Water Council Twente University WWF The Coca-Cola Company Good Stuff International Aquafed/WBCSD WWF Water Neutral The Nature Conservancy (TNC) CC Hellenic Lyonnaise des Eaux Suez Environment</p>	<p>Meeting #4: 19 June 2008 Host: WWF, London, U.K.</p> <p>The Coca Cola Company Emvelo Group WBCSD WWF NESTLE SAB Miller Pacific Institute Good Stuff International</p>