Corporate Water Accounting:

An Analysis of Methods and Tools for Measuring Water Use and Its Impacts

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UNEP WaFNe Umbrella Project: Corporate Water Accounting

- UNEP commissioned the Pacific Institute in its role as part of the Mandate Secretariat to conduct an analysis of corporate water accounting methods and tools
- Part of the UNEP Water Footprinting, Neutrality, and Efficiency (WaFNE) Umbrella Project
- Draft went out for public review (until December 11th)
- Released April 9, 2010.

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Project Objectives

Overarching objective:

Stocktaking exercise will fulfill the need to clarify commonalities and differences among existing and emerging water accounting methods and tools being used in the private sector.

Specific goals:

- Elucidate applicability, strengths, and weaknesses among emerging methods and practice,
- Identify gaps and challenges, and
- Suggest where accounting methods might benefit from harmonization and increased field testing.

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A Framework for Corporate Action to Mitigate Water Risk

1. **Measure** corporate water use, wastewater discharge, and related impacts
2. **Assess** the physical, regulatory & reputational risks; align assessment with climate & energy risk
3. **Engage** key stakeholders
4. **Integrate** water issues into strategic business planning & governance
5. **Disclose** water performance & associated risks

Source: *Water Scarcity & Climate Change*, Ceres and Pacific Institute 2009

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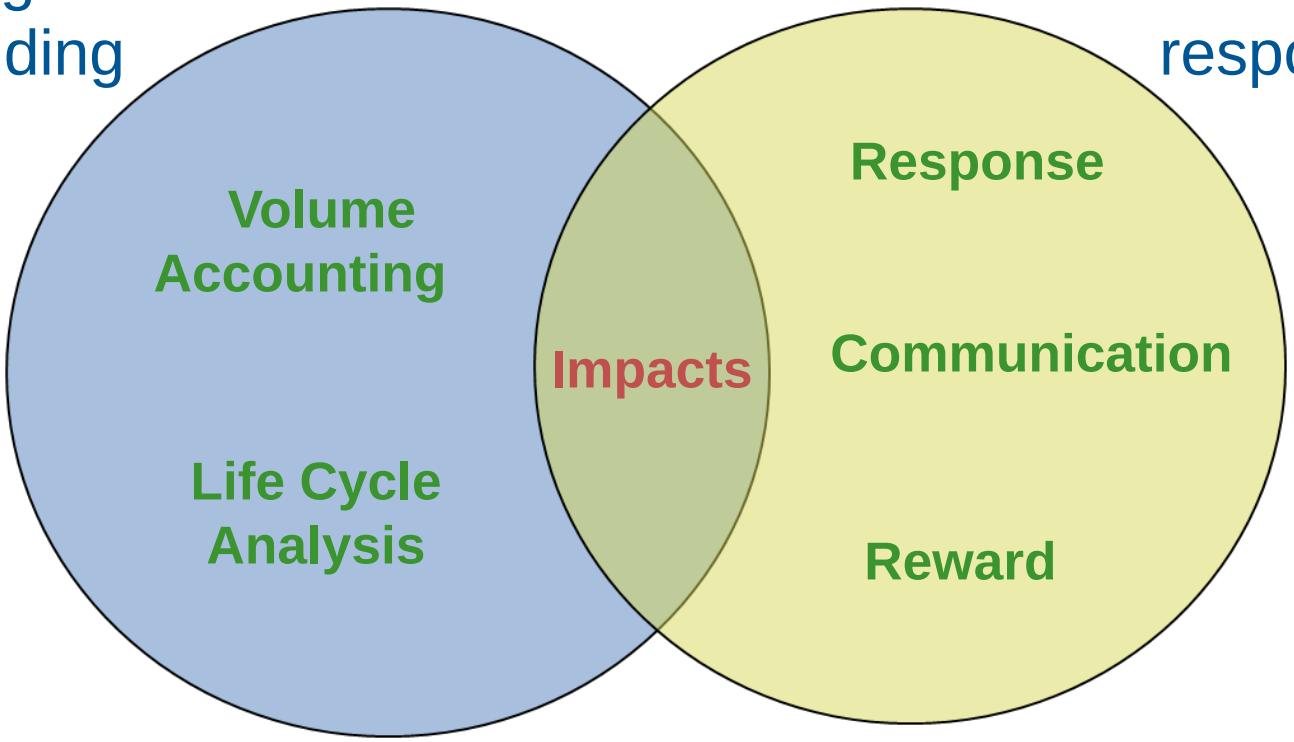
Relationship Between Stewardship and Accounting

Accounting: understanding

Stewardship: responding



ALLIANCE FOR WATER STEWARDSHIP

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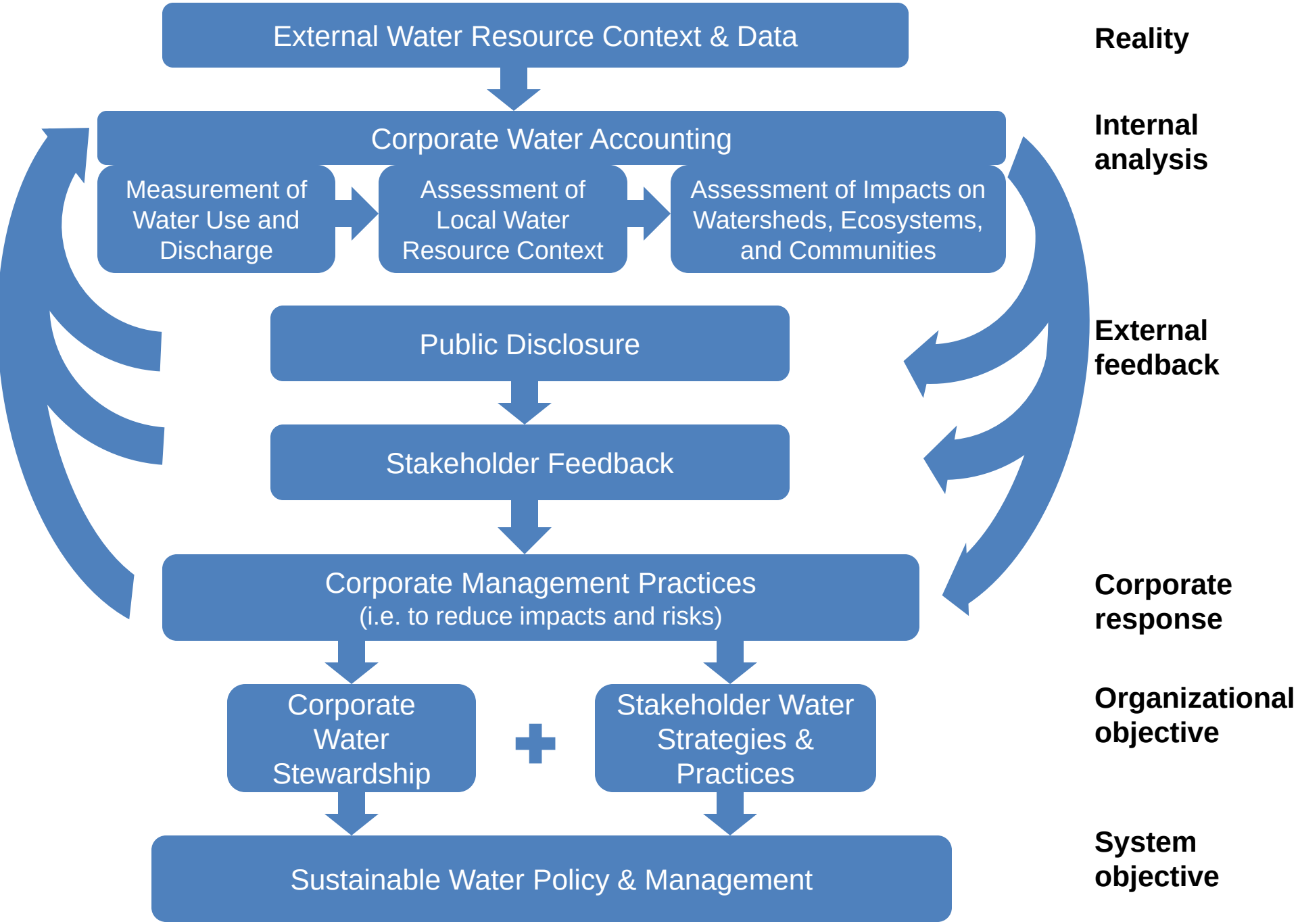
External Water Resource Context & Data
Reality
Corporate Water Accounting
Internal analysis
Measurement of Water Use and Discharge
Assessment of Local Water Resource Context
Assessment of Impacts on Watersheds, Ecosystems, and Communities
Public Disclosure
Stakeholder Feedback
External feedback
Corporate Management Practices
(i.e. to reduce impacts and risks)
Corporate response
Corporate Water Stewardship
Stakeholder Water Strategies & Practices
Organizational objective
Sustainable Water Policy & Management
System objective

Accounting Methods and Tools

Focus on four key accounting methods/tools:

1. The Water Footprint Network's "water footprint"
2. Life Cycle Assessment (LCA)
3. WBCSD Global Water Tool
4. GEMI Water Sustainability Planner/Tool

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Applications of Corporate Water Accounting

Corporate water accounting can be seen as serving four general purposes:

1. Operational efficiency, product eco-design, sustainable manufacturing
2. Water risk assessment
3. Managing social and environmental impacts and response
4. Communicating with stakeholders

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Overarching Conclusions

1. Terminology confusion

– In particular, we must reach a shared understanding of the term “water footprint”

2. Shift toward external factor

– Increased focus on understanding social, political, environmental conditions of the watersheds in which companies operate

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Overarching Conclusions (cont.)

3. Lack of harmonization

- The approaches used to measure and report risks and impacts vary among companies and industry sectors
- It is often difficult to compare water risks and impacts across a company's different facilities, over time, and between different companies

4. Supply chain issues underemphasized

- Much of a company's water use, discharge, and impacts occur in the supply chain
- Measuring suppliers is difficult due to the challenge of managing data from a vast array of suppliers and tracking water issues related to their suppliers

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Overarching Conclusions (cont)

5. Inadequate data

- Most often due to inadequate databases, lack of access to existing data, lack of measurement protocol or mechanisms, or insufficient granularity of data.

6. The water-energy-carbon nexus

- Water-related impacts and risks are inextricably linked to their energy use and carbon emissions
- Accounting methods are only beginning to assess and highlight these linkages.

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Summary of Findings Methods and Tools

	WFN Water Footprinting	Life Cycle Assessment	WBCSD Global Water Tool	GEMI Water Sustainability Tools
General Strengths	•Good tool for "big picture" strategic planning purposes •Easily understood by non-technical audiences •Bes for water use assessments, as opposed to water quality	•Uniquely well-suited for cross-media environmental assessments •Mature science-based methods for assessing water quality impacts	•Good first-tier risk screen •Inexpensive, fast, and does not require company expertise •Simple inventory for companies to compile their water data	•Useful for companies just beginning to think about water stewardship •Inexpensive, fast, does not require expertise
General Weaknesses	•Generic, aggregated blue-green-grey WF figures are misleading •Grey WF deemed ineffective by companies	•No universally accepted method of assessing water use impacts •Results can be difficult to communicate to nontechnical audiences	•Does not address water quality/discharge-related risks •Does not address impacts •Assessments provide only rough estimates of risk	•Rudimentary assessment of relative risks •No quantified results

Operational efficiency / Product eco-design / Sustainable manufacturing

- Operational efficiencies reduce costs of energy, water, new infrastructure, etc. and burden on water resources
- Accounting in this area generally relies more on internal production data rather than external watershed data
- We do not explore this area of water accounting in detail, because approaches vary depending on the company and/or are proprietary

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Water risk assessment

- Water risks are caused by: 1) the impacts of a company's water use/discharge and/or 2) watershed conditions unrelated to the company.
- Risk assessments can be conducted with internal production data and/or external watershed data
- "First-tier" risk assessments can be done with relatively little data and are inexpensive and not time-consuming
- Methods for comprehensively assessing watershed conditions are currently underdeveloped

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Assessing social and environmental impacts

- Impacts on ecosystems, communities and/or watersheds will create regulatory and reputational risk.
- Involves weighting water use/discharge data based on the physical, social, and economic water scarcity of the watershed from which that water was taken.
- Requires both in-depth internal production data and external watershed data
- Methods for assessing water use impacts are currently underdeveloped and in need of harmonization

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Communicating water risk / performance with stakeholders

- Companies disclose their water accounting efforts to stakeholders in order to improve transparency and accountability
- As corporate water accounting has evolved from an inward to outward focus over the years, there has been a corollary shift in demand for information on watershed conditions and impacts
- There is a need for harmonized reporting metrics

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Recommendations

- Common definitions of key terms and concepts
- Assessment of local water resource context
- Harmonized reporting criteria
- Improved data collection
- Assessment of supply chain
- Addressing water quality
- Cooperation among companies

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Assessing Water-Related Business Risks

WFN Water Footprinting	Life Cycle Assessment	WBCSD Global Water Tool	GEMI Water Sustainability Tools
•Identifies “hotspots” linking corporate consumptive water use and source water data •Green/blue WF distinction helps shed light on nature of risk	•Uses science-based impact assessment as the starting point for understanding business risk •Operational “hotspots” used for product design improvement, technical improvements	•Emphasizes place-based water metrics that contextualize company water use and that serve as the basis for understanding risk •Identifies “hotspots” by mapping facilities against external water and sanitation data	•The Planner assesses external factors that will have negative effects on specific facilities •The Tool helps companies identify business-wide water-related risks

Understanding and Responding to Water Use and Quality Impacts

WFN Water Footprinting	Life Cycle Assessment	WBCSD Global Water Tool	GEMI Water Sustainability Tools
•WF calculation does not attempt to quantify water-related impacts •Green/blue WF distinction illustrates general extent and type of impact •Gray WF underdeveloped/ underutilized – focuses on primary pollutant and calculates theoretical volume of dilution water needed to reach regulatory standards	•Situates water impacts within a broader understanding of sustainability impacts •Characterizes water use data based on relative water stress to quantify impacts •Measures individual contaminant loads •Does not typically quantify impact to specific local receiving bodies	•Does not characterize corporate water use or otherwise attempt to assess impacts •Does not assess water quality issues	•Provides a compilation of information that can help better understand and identify impacts, but does not quantify them •Provides questions that help companies understand their effects on quality of water bodies

Conveying Water Information to Stakeholders

WFN Water Footprinting	Life Cycle Assessment	WBCSD Global Water Tool	GEMI Water Sustainability Tools
•Can be an effective public-awareness building tool •Conducive to business engagement with water resource managers	•In many instances, particularly in North America, is used for internal purposes only •Awareness levels in both business and the public vary tremendously around the globe •Used to inform ecolabel programs	•Results of "hotspotting" are more frequently included in CSR reports •Automatically calculates water-related GRI indicators to be used for CSR reports	•Is not intended for use as a communication tool, nor is it commonly used as one