



The CEO Water Mandate



ESTABLISHING CONTEXT-BASED WATER STEWARDSHIP TARGETS: A DISCUSSION PAPER

DRAFT FOR INPUT & DISCUSSION

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EXECUTIVE SUMMARY

The purpose of this paper is to make the case for meaningful, context-based corporate water targets that are science-driven and in alignment with the public sector, as well as to solicit feedback that will inform the development of a common methodology that will assist businesses in setting such targets. The paper also makes the case for considering the targets underpinning Goal 6 (Water) of the United Nations Agenda 2030 Sustainable Development Goals (SDGs) as a foundational framework for such context-based target setting. We believe that by shifting to more science-informed, context-based water targets, companies (and their investors) will more meaningfully mitigate their water risks, while simultaneously benefitting communities and ecosystems by helping to deliver outcomes around shared water challenges. An aligned and joint approach may also help provide confidence to the finance community that the corporate commitments set are sufficient to address the fundamental water challenges companies face.

The commitments and targets companies set are fundamental to determining the impact a company has on the status of water resources. While there are pockets of good practice and an increasing appreciation for the need to collectively act and coordinate on shared water challenges, there is still room for improvement. We believe that the time is now right to develop a common methodology that will assist companies in setting targets that:

- tie to the status of the context within which they operate or buy from;
- are based in science; and
- align with public sector efforts, particularly the targets relating to the United Nations' SDG on water.

The benefits are wide-ranging. We believe that such targets will build on water risk mitigation to fundamentally lower water risk exposure. The improved status of shared water challenges is ultimately in the interests of business and its stakeholders, while simultaneously contributing to the public sector's agenda.

Conversely, operationally focused water targets, related to improvements in water use intensity for example, while valid for business objectives such as increasing output with the same amount of water, do not, by default, mitigate physical, regulatory nor reputational water risk, nor are they necessarily meaningful in terms of water stewardship. For a corporate water target to effectively reduce risk and impact, the "saved water" must be linked back to the context (i.e., made available to ecosystems and communities).

As companies begin down the path of context-based water targets, we feel that a scientific foundation offers the strongest basis for establishing such targets and prioritizing challenges facing local water resources. A factual basis for understanding the water system, including data on water use, availability, and the ability of water bodies to absorb water pollution, helps bring objectivity to assessment, planning and shared water budgets. Science helps remove the guessing game related to the type and extent of targets appropriate to a water body or river basin, so that ecosystems (including the services they provide) and communities are sustained¹. The water stewardship community can draw upon learning in the carbon world in which public sector defined sustainability boundaries have been established. Parallel boundaries set at a basin level with collective targets that ensure users stay within these boundaries allow for each water user to establish contextually-meaningful targets. As such, we believe it is in companies' interests to work to ensure all parties work towards common, context-specific, science-driven targets.

Lastly, we suggest that the public sector is central to the determination of context. Regulatory water risks are directly determined by the public sector, while physical water risks are often influenced by policy and regulations (e.g., water allocations, discharge permits, etc.), and even reputational water risks are often linked to the public sector (e.g.,

¹ While science is a critical basis for targets that are meaningful, water use is also informed by other socio-political aspects, and accordingly, we have opted to employ the term "context-based" rather than purely "science-based".

consumers expressing concerns over pollution violations). In short, water risk is heavily determined by the context established by the public sector.

As companies seek to more concretely tie their efforts to water risks and water stewardship outcomes, results will be stronger if language, target setting, and assessment frameworks can be aligned around common ground. Fortunately, the emergence of recent efforts, including the SDGs, as well as other multi-stakeholder initiatives, has provided an opportunity to catalyze good practice. Access to safe drinking water, sanitation and hygiene, water balance, water quality, water governance, and water-related ecosystems have been recognized through a range of processes (e.g., from the UN's SDG6 to the Alliance for Water Stewardship, etc.) as universally important, and can offer a framework that helps stakeholders understand and work jointly to address shared water challenges across all geographies.

In summary, this paper calls upon more companies to:

- Adopt the use of more meaningful context-based water targets that address shared water challenges and ultimately mitigate water risks
- Align water stewardship strategies (and targets) to frameworks tied to public sector efforts, including the areas within SDG6 (namely WASH, water balance, water quality, water governance, and water-related ecosystems) and relevant local water governance initiatives in an effort to provide consistency, clarity and further reduce reporting burdens
- Join us in developing a science-based approach for corporate water target setting that is informed by learning from the public sector, draws on existing good practice in the private sector, can enable shared monitoring systems, and that collectively moves stakeholders toward meaningful and sustained outcomes at the basin level while more effectively reducing water-related business risks.

Our hope is that this paper will form the basis for discussion on how to arrive at a commonly agreed on methodology that will assist business to develop more consistent context-specific, science-driven targets that tie to the SDGs and the public sector's efforts to deliver shared water outcomes.

ACRONYMS

AWS	Alliance for Water Stewardship
DB	Development Banks
GDA	Governmental Development Agencies
IWRM	Integrated Water Resources Management
MIS	Monitoring Information System
M&E	Monitoring & Evaluation
NGO	Non-Governmental Organization
SDG	Sustainable Development Goal
UN	United Nations
WASH	Water, Sanitation and Hygiene
WRM	Water Resource Management
WWF	World Wildlife Fund

TERMINOLOGY

For the purpose of this discussion paper we define:

Basin:	The area of land from which all surface runoff and subsurface waters flow through a sequence of streams, rivers, aquifers and lakes into the sea or another outlet at a single river mouth, estuary or delta (AWS, 2014). Note that the term basin is synonymous with catchment and watershed.
Indicator:	Used to evaluate the state or level of something. For example, water withdrawals in m ³ is an indicator of the volume in m ³ of water removed from a given source.
Targets:	Specific, measurable, time-bounded achievements. For example: “Treat 100% of wastewater effluent discharge to WHO drinking water standards at all facilities by 2030” and “50% of facilities positively participating in local integrated water resource management plans by 2018” could be targets for a given company. [Note that our use of “targets” is generic and as such is not synonymous with the formal SDG Targets and Goals.] For the purpose of this paper, targets are synonymous with corporate “goals” and “objectives”.
Meaningful targets:	In this paper, a target is considered meaningful if it addresses the underlying shared water challenges that are often the source of corporate water risks. For a target to be meaningful to companies, it must be materially relevant to the company’s finances and ultimately to shareholder value. For a target to be meaningful to other stakeholders, it must contribute to their respective aims. Ideally, targets should be meaningful to all audiences - corporate, public and civil society.
Water stewardship:	The use of water that is socially equitable, environmentally sustainable and economically beneficial, achieved through a stakeholder-inclusive process that involves site and catchment-based actions (AWS, 2014).

1. INTRODUCTION

The purpose of this paper is to explain the case for corporate context-based water targets and for the development of a common methodology that will assist businesses in setting meaningful targets. It also seeks to make the case for considering the areas of Target 6 (Water) from the United Nations Sustainable Development Goals as a foundational framework for such targets.

We believe that by shifting to the setting of more meaningful, context-based water targets, that are rooted in objective science, companies (and investors) will more meaningfully mitigate their water risks, while simultaneously benefitting communities and ecosystems. An aligned and common approach may also help further reduce the reporting burden while providing more material information to the financial community.

The hope is that this paper will form the basis for discussion on how to collectively proceed with identifying good practice and developing a commonly agreed upon methodology that will assist business to develop common, context-specific, science-driven water targets that align with the SDGs.

Meaningfully Mitigating Water Risk

The economic and financial importance of water to companies is well established². In a world facing a 40% supply-demand gap within the coming 15 years³, the call for the private sector to address water risks has grown significantly over the past five years⁴. In response to this challenge, companies have expanded their efforts on water: as of 2015, eighty percent of companies responding to CDP's water information request sent on behalf of 647 investors with \$67 trillion in assets, had set water targets and/or goals.⁵ Moreover, the past decade has seen an increasing number of companies recognize that water poses a significant risk to their business with many of these businesses taking action to mitigate their risks via improved water management practices and stewardship.⁶ This includes not only water use awareness, but water risk assessment, collaboration and support of platforms like the CEO Water Mandate, disclosure, and policy engagement.

Since water risks are often dictated by shared water challenges, the efficacy of risk mitigation efforts is tied to shared outcomes. This would suggest that good practice for setting corporate water targets will increasingly speak to the efficacy of achieving outcomes tied to these shared water challenges. Operationally focused water targets related to water use efficiency and water intensity for example, will be of value to a business by reducing its water costs and increasing productivity. However, these may do little to reduce absolute water use within the basin and therefore may not effectively mitigate, or even lower, the water risks facing companies. Such targets do not, by default, mitigate physical, regulatory nor reputational water risk, nor are they meaningful in terms of water stewardship.

Progress by companies towards water stewardship has been significant in recent years. Not only have corporate partnerships with leading NGOs expanded both in number and size, but importantly, capital has begun to flow to address water challenges and good management practice, as seen by the rise in water-related green bonds. Companies are also increasingly realizing the importance of engaging local stakeholders to manage these water risks at the basin level. According to 2016 CDP water data on water risk assessments from 574 companies, 77 percent of companies consider current and future estimates of changes in water availability and quality at a local level. Seventy-four percent include current and future potential water regulatory frameworks and tariffs at a local level.⁷

Yet despite these various and welcomed efforts, global freshwater challenges (and their associated corporate water risks) are not abating. Indeed, evidence suggests that despite the best efforts of companies, NGOs and the public sector,

² WEF (2016) The Global Risks Report 2016 <http://reports.weforum.org/global-risks-2016/executive-summary/>

³ 2030WRG (2009) Charting our Water Future <http://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/charting-our-water-future>

⁴ CDP (2015) 2015 Global Water Report 2015 <https://www.cdp.net/en-US/Pages/events/2015/water/global-water-report-2015.aspx>

⁵ Analysis supplied by CDP, August 2016

⁶ <http://ceowatermandate.org/files/Stockholm/Corporate%20Water%20Stewardship%20and%20the%20SDGs.pdf>

⁷ Analysis supplied by CDP, August 2016

water challenges are only growing. Disconcertingly, we are seeing evidence that absolute water consumption continues to grow, despite increasing efficiency⁸ resulting in a net loss of water and in turn, impacts on communities and ecosystems as well as business viability. Water “saved” via efficiency efforts has gone back into more extensive production, or to other consumers in the basin. As a result, basins continue to suffer from cumulative impacts. The myriad of independently set corporate targets are not adding up to more water secure basins. A collective, science-based response to basin water challenges is essential if companies are to effectively *decrease* water risk exposure.

Recent years have seen a rise in collective action, but this represents a relatively new concept. As collective action emerges, there is the need for consistency and guidance around how companies can work together to make meaningful contributions to these shared water challenges. To do so will require common terminology and also consistent, internationally agreed upon, standardized frameworks for setting, and thereby aligning (and potentially sharing) corporate water targets.

Exploring Frameworks for Water Targets: The opportunity of the Sustainable Development Goals

Thankfully, in recent years there have been various efforts aiming to establish consistent and common water frameworks, including some specifically dedicated to water stewardship. For example, in 2014, the Alliance for Water Stewardship (AWS), building from earlier thinking from Water Stewardship Australia and the European Water Partnership, released the AWS Standard; a site-level water stewardship standard framed around four outcomes: water governance, water balance, water quality and important water-related areas. This multi-stakeholder process sought to align terminology, link tools and employ a universally applicable approach that connected shared water challenges to water risk mitigation.

Work on mapping and assessing water risks has grown considerably since 2011 as well. The emergence of WWF’s Water Risk Filter and WRI’s Aqueduct Tool have, along with the data sets they draw upon, helped to develop a level of consistency around water risk assessment. Furthermore, our understanding of basin system limits (e.g., environmental flows, pollution assimilation, etc.) has also continued to improve, providing a vital basis for understanding the key shared challenges that drive undesirable impacts on businesses, communities and nature. Stakeholder-led initiatives to track the status of basins (e.g., WWF’s Basin Report Cards) as well as freshwater ecosystem service modelling tools and initiatives (e.g., NatCap’s InVEST and RIOS tools; the Natural Capital Protocol) have also helped to further consolidate approaches to achieve more scientifically-rigorous and consistent methods. The disclosure space has also seen significant alignment on water stewardship issues through efforts such as CDP Water.

Lastly, in late 2015, the world saw the emergence of a new framework in the Sustainable Development Goals. Superseding the Millennium Development Goals, the Agenda 2030 Sustainable Development Goals (or SDGs) include 17 Goals, which provide not only governments but business as well, an exciting opportunity to align public, private, and NGO efforts through a common framework. This not only includes alignment among sectors within a basin, but also harmonizes reporting across countries. Goal 6 is devoted entirely to water, and the SDG6 Targets (Appendix 1) offer a relatively comprehensive set of issues, which can form the base of guiding corporate water stewardship efforts and at the same time, align basin impact status.

Goal 6 is comprised of six Targets covering key areas of sustainable water management:

- 6.1 Access to safe and affordable drinking water,
- 6.2 Access to adequate and equitable sanitation and hygiene,
- 6.3 Improve water quality and reduce pollution,
- 6.4 Increase water-use efficiency, and address water scarcity
- 6.5 Implement integrated water resources management (stronger water governance) at all levels, and
- 6.6 Protect and restore freshwater-related ecosystems.

What is notable about these six areas is that they are remarkably consistent with some of the other frameworks that have emerged to serve the corporate audience (e.g., AWS). The SDGs were unanimously adopted through an inclusive

⁸ Pfeiffer, L. and Lin, C.Y.C (2014) Does irrigation efficiency technology lead to reduced groundwater extraction? Empirical evidence. Journal of Environmental Economics and Management, 67(2): 189-208. <http://www.sciencedirect.com/science/article/pii/S0095069613001095>

process and account for public sector priorities, and have also been endorsed by civil society and the private sector. They offer the opportunity for a mutually meaningful framework that can form the basis for setting mutually-meaningful, context-based water targets.

The Corporate Rationale for a Common Framework

Business, in general, has been supportive of consistent frameworks when it comes to sustainability and have championed the emergence of initiatives such as CDP, Global Reporting Initiative and the Sustainability Accounting Standards Board. Consistent frameworks (and SDG6 in particular) offer a number of benefits, including helping business to:

- 1) **Become more efficient and effective in addressing shared water challenges and reducing water risks.** A common framework can allow companies to gain access to better, cheaper water data, as well as to find co-investors and additional capacity that can help defray the costs of solving shared water challenges. Companies are able to learn from one another, improving the effectiveness of their water programs, and delivering much larger-scale impacts through coordination (in contrast to the current multitude of disparate efforts). Greater engagement with regulators and local communities tend to strengthen relationships, helping to decrease reputational risk, while also solving the shared water challenges that will fundamentally reduce corporate water risks.⁹
- 2) **Make more meaningful contributions to the global development agenda.** By connecting their priorities with global policy priorities, as well as the local and country-level initiatives that contribute to achieving SDG6, companies not only improve accountability, but also brand perceptions, confidence and trust among local and global stakeholders. The SDGs will also offer the opportunity to track both effort (activity and outputs), as well as the resulting outcomes in a robust, academically rigorous manner.
- 3) **Reduce reporting burden.** Alignment around a few key (and meaningful) areas may allow companies to drop some of the existing, commonly employed metrics such as those tied to water efficiency. Conversely, as stakeholders increasingly request information on SDG contributions, an aligned approach will help to reduce such additional reporting requests.

Indeed, aligned (and potentially shared) targets may offer the most efficient and effective means to address shared water challenges and ultimately mitigate many of the water risks the private sector is facing.

2. CURRENT PRACTICE IN CORPORATE WATER TARGETS

Analysis of over 570 corporate responses to CDP’s water information request indicates that companies are taking steps to develop a deeper understanding of the context within which they operate.

For example, when assessing water-related business risks, most companies account for water availability and quality issues at a local level (Table 1). This may be driven by the prevalence of water risk tools available to evaluate water quantity and quality. Importantly, companies are also beginning to confront a broader suite of water risk factors as part of enterprise water risk assessments, including the business implications of stakeholder conflicts over water, the degraded status of ecosystems and habitats, and potential impacts on the human right to water, sanitation, and hygiene.

Table 1. Risk factors included in company risk assessment

Risk factors included in company risk assessment	# of companies responding	% of sample reporting through CDP
Current and future estimates (including scenario analysis) of changes in water availability and quality at a local level	442	77%
Current and future potential (including scenario analysis) water regulatory frameworks and tariffs at a local level	427	74%

⁹ <http://ceowatermandate.org/files/Stockholm/Corporate%20Water%20Stewardship%20and%20the%20SDGs.pdf>

Current and future potential stakeholder conflicts concerning water resources at a local level	322	56%
Current and future (including scenario analysis) implications of water on key commodities/raw materials	308	54%
Current and future estimates of status of ecosystems and habitats at a local level	313	55%
Current access to fully-functioning WASH services for all employees	279	49%
Current river basin management plans	248	43%

In addition to understanding the local context, many companies recognize the need to consider a wide range of stakeholders beyond the company fence line when assessing water risks (Table 2). This helps organizations better understand the local context in which they operate, and take into account the needs of all other relevant water users when assessing and responding to water risks.

Table 2. Stakeholders included in company risk assessments

Stakeholders included in company risk assessments	# of companies responding	% of sample reporting through CDP
Regulators	384	67%
Local communities	381	66%
Employees	370	64%
Water utilities/suppliers at a local level	342	60%
Customers	308	54%
Other water users at a local level	308	54%
Investors	307	53%
Suppliers	291	51%
NGOs	285	50%
River basin management authorities	274	48%
Statutory special interest groups at a local level	212	37%

Through considering a broader range of stakeholders, companies are able to identify a wider variety of shared water challenges, which if not managed, could result in water risks that have a material impact on their financial statements. Often these risk factors are beyond a company's direct control and thus require that companies establish a broad range of enterprise wide targets and goals to in order to address them (e.g., community, supplier or policy maker engagement) as seen below in Table 3.

Table 3. Most common corporate water targets and goals

Targets and goals	# of companies responding	%	Metrics	General focus
Absolute reduction of water withdrawals	153	27%	% reduction of water sourced from municipal supply	Internal
Reduction of product water intensity	130	23%	% reduction per unit of production	Internal
Watershed remediation and habitat restoration, ecosystem preservation	115	20%	No frequently occurring metric at this time	External
Reduction in consumptive volumes	105	18%	% reduction per unit of production	Internal
Strengthen links with local community	73	13%	No frequently occurring metric at this time	External
Water pollution prevention	71	12%	% reduction in concentration of contaminants per discharge volume	Internal
Engagement with suppliers to help them improve water stewardship	64	11%	No frequently occurring metric at this time	External
Engagement with public policy makers to advance sustainable water policies and management	60	10%	No frequently occurring metric at this time	External

The extent to which the targets in Table 3 account for their context is unclear, but the metrics themselves are context independent and experience suggests such approaches often lack contextual relevance. CDP data on the motivation behind these targets suggests that in many cases internal efficiency targets are being established in an effort to lower water risks. However, since water risk is predominantly driven by external, contextual, shared water challenges, there may be a disconnect between the strive to increase water productivity and the desire to experience lower water risks. Indeed, field practitioners often see scenarios in which water use intensity of a company is declining, while physical water scarcity (and therefore water risks) continue to grow.

In summary, the evidence suggests that companies are indeed becoming more aware of the importance of context, in particular through water risk assessments. The private sector also appears to be increasingly accounting for stakeholders and the fact that some 20% of CDP respondents are now setting targets associated with basin restoration efforts is laudable. The private sector has a significant role to play in impacting the status of water resources. The commitments and targets companies set, can heavily influence the ultimate contribution many make; and while there are pockets of good practice, there is room for improvement. In order to most effectively ensure reductions in corporate water risk exposure, companies will need to set targets that:

- tie to the status of the context within which they operate or buy from;
- are based in science; and
- align with efforts in the public sector particularly the areas of Target 6 (Water) from the United Nations Sustainable Development Goals.

Nevertheless, with the most frequent corporate water metrics (and their associated targets) still internally-focused, and with little evidence to suggest strong contextual elements, companies may need to reconsider not only how they measure (i.e., metrics) but also their aims (i.e., targets) if they are indeed seeking to reduce water-related business risks. To most effectively ensure corporate water risk reduction, companies will need to ensure both operationally-oriented internal targets, and stakeholder-aligned (i.e., collective action) external targets that can deliver outcomes on shared water challenges.

3. CURRENT PRACTICE IN PUBLIC SECTOR WATER TARGETS

Water is a human right that is, by and large, managed and regulated by the public sector. As outlined in Section 2 (Table 2), companies are well aware of the importance of regulators as a key stakeholder and driver of the context. The public sector plays a critical role in defining, setting, and achieving water policy objectives that inherently address contextual factors, mostly because:

- The public sector is ultimately the sector most directly tied to achieving more sustainable water resource management. This includes, but is not limited to, the goals and targets codified in 2030 Agenda SDGs that will be the orientation of governments in years to come;
- The public sector is most often charged with the provision of water data and monitoring to assess progress toward policy objectives;
- The public sector is responsible for setting and enforcing meaningful regulatory requirements for water users as well as safeguarding ecosystems and ensuring access to safe water, sanitation and hygiene;
- The public sector is often heavily involved in financing infrastructure and socioeconomic development projects and therefore often invests considerable resources to achieve its own targets related to water.

If we accept the premise that effective water risk reduction requires both contextually-relevant internal and external targets, then the first conclusion we can draw is that corporate engagement with the public sector emerges as an important aspect of corporate contribution to shared water outcomes and, the setting of context-based targets.

Secondly, by engaging the public sector, and moreover, aligning corporate water targets with public sector targets, companies could derive a number of benefits. For example:

1. **A more stable business environment:** Sustainable management of public/shared resources creates a stable operating environment for business.

2. **Cost savings:** Both sectors can utilize the same monitoring system to track basin-level impacts of policy or corporate initiatives.
3. **Greater efficiency in risk reduction:** Common (aligned/shared) metrics and language facilitate more effective collaboration/collective action towards shared water challenges, thereby lowering water risks.

Thirdly, companies may harness extensive learning from the public sector's efforts to evaluate progress against shared water challenges. There is an extensive body of literature not only about domestic, basin target-setting, but also regarding performance monitoring of water-related aid efforts. Companies need not re-invent the wheel, but rather can learn from the public sector's experience (while also contributing to mutual learning).

This is not to say that corporate target-setting should be driven entirely by the public sector's agendas. Rather, the agenda of both the public and private sector do have a common middle ground when it comes to many water issues and accordingly, they represent a useful starting point for target-setting.

As the work on context-based water targets advances, we are proposing a series of areas of joint interest (private/public/civil society) to explore. Several of these areas are outlined below.

(A) Basin planning and allocations

Government agencies are charged with regulating water use and the associated impacts, and as such, with determining pollution allowances and limits to water withdrawals for any given location based on the cumulative water stress facing a given basin. To assist with these decisions, new approaches have emerged linked to the principles of integrated water resources management (IWRM) and strategic river basin planning.¹⁰ Allocation targets set during strategic river basin planning need to be defined across multiple considerations, including administrative and geographical governance structures, different timescales, seasonality and other water management plans and processes. Environmental flow allocations need to be considered from the outset as experience in Australia and other places has illustrated the economic challenge of reclaiming such allocations. The ability to proactively factor in these numerous considerations helps ensure that trade-offs are as equitable as possible and optimize the social and economic development of services. Other success factors include adequate stakeholder engagement and cooperation, a strong institutional mandate and capacity, and well-established and visible methods for communicating results and progress.

With respect to water quality, the public sector has proven approaches to pollution allocation that address the shared challenge of cumulative impacts. The US Environmental Protection Agency's National Pollutant Discharge Elimination Systems (NPDES) is a permit-based program established under the Clean Water Act that enables context-specific discharge limits to be set, monitored, tracked and enforced¹¹. Importantly, pollution allocations are parsed out between those who are discharging and then tracked to ensure that water quality is maintained and in so doing, that the associated physical water risks are minimized.

The public sector has also employed other market-based mechanisms such as water quality (emissions) trading¹², or water allocation trading¹³ which offer further context-based approaches aimed to deliver outcomes that benefit all users within a basin. These sorts of approaches, while not without their challenges, merit greater attention as the private sector begins to explore context-based targets.

(B) Water data and monitoring

Public sector organizations are the largest providers of water-related data, nevertheless, one of the main challenges faced by governments when establishing water targets is the availability of data. Experience from developing global water tools, such as WWF's Water Risk Filter, WRI's Aqueduct Water Risk Atlas, or TNC's Urban Water Blueprint, has

¹⁰ WWF-UK (2012) Strategic Basin Planning. Available online: http://d2ouvy59p0dg6k.cloudfront.net/downloads/2_strategic_basin_planning_web.pdf

¹¹ National Pollutant Discharge Elimination Systems (NPDES) <https://www.epa.gov/npdes>

¹² E.g., Shortle, J. (2013) Economics and Environmental Markets: Lessons from Water-Quality Trading, Agricultural and Resource Economics Review

¹³ NatureVest (2016) Water Markets <http://www.naturevesttnc.org/business-lines/water-markets/>

made clear there is a considerable lack of comparable and comprehensively reported water data. While there have been significant advances in technology and science (e.g., remote sensing, ecosystem service modelling, etc.), national, local and provincial governments continue to face significant data gaps, and because of that, so do companies. In the context of SDG6, some data exists, but for the most part, significant investments in data collection and disclosure are needed. Monitoring, evaluation and water data will need more funding, more collaboration, and greater accessibility.

(C) Infrastructure and international development targets and outcomes

Lastly, there is a significant public sector investment both domestically and in international development projects related to water. The decades of scrutiny facing such projects means that much can be learned from prominent governmental development agencies (GDAs) and development banks (DBs) as it relates to water-related project planning, monitoring, and evaluation, particularly as it related to meeting desired water-related targets.

In reviewing publicly disclosed data on water-related GDA and DB projects, several initial conclusions may be drawn:

- 1) **The public sector itself has not yet aligned to the SDG6 targets.** GDAs and DBs employ an inconsistent approach in how they classify water development projects. This results in an inability to accurately attribute project outputs and contribute to the different SDG6 targets. There is however, an overlap in project indicators and metrics, which for the most part cover the following topics: Institutional capacity, human capacity, water quality, water quantity, economics, and ecosystems. *Why it matters to business?* These metrics, combined with the public sector's shift towards SDG alignment, creates an opportunity to engage the public sector both for learning and alignment.
- 2) **Shared monitoring systems are powerful but challenging (and are strengthened via stakeholder engagement and knowledge sharing).** For stakeholder buy-in, monitoring and evaluation (M&E) systems must be established early on to effectively monitor project progress. A robust definition of the M&E processes and systems, as well as a clear monitoring information system (MIS) or accounting process are valuable to avoid misinterpretation by project stakeholders. *Why it matters to business?* If companies seek to address shared water challenges (and their linked water risks), it is likely that the private sector will share and participate in these sorts of systems and would be well served to understand their challenges. Target setting may involve greater stakeholder engagement than is traditionally employed, but in so doing, may decrease reputational water risks, in addition to driving shared water challenge outcomes.
- 3) **Consistency of indicators will be critical** The evolution of commonly used standard and target definitions due to global discussions can inhibit the ability of organizations to definitively report process against agreed indicators. *Why it matters to business?* Businesses already employ many consistent metrics and understand the value of consistency for benchmarking, disclosure to investors, etc. Consistency will be an important element for all parties, especially in reporting progress against SDG6.
- 4) **On-the-ground M&E capacity (including funds) are critical to ensure quality control.** Many public sector M&E systems lack the necessary training, funds and ongoing investment to maintain monitoring quality. This can affect monitoring of long term trends and jeopardize progress. *Why it matters to business?* Good quality data helps everyone to know that shared water challenges are indeed being addressed. Furthermore, shared capacity building offers efficiencies to both the private and public sector, which can lower costs for all parties.
- 5) **Much of the current GDA and DB effort on water is oriented on access to drinking water (SDG 6.1), water quality (SDG 6.4), and governance (SDG 6.5).** Observed projects tended to have a primary focus on measuring immediate outputs and outcomes delivered rather than more sustained, longer-terms social, environmental and economic impacts. *Why it matters to business?* Often companies are primarily concerned with water scarcity and are ultimately interested more in the sustained impacts on shared water challenges since these are the drivers of water risk. Companies may have a key role to play in ensuring stronger long-term impacts, as well as a broader range of coverage (e.g., on SDG 6.3, 6.6, etc.).

In summary, the public sector is not only a key element of the context, but also offers considerable learning for the private sector when it comes to context-based water target setting and monitoring. The opportunities for the private sector to engage with, learn from, draw data from (and share data with), and align with public sector water initiatives (especially the SDGs) is extensive. Moreover, for companies to effectively address the shared water challenges that underpin corporate water risks, collaborating with the public sector (and also other context-driven stakeholders) will be essential.

4. SCIENTIFIC FOUNDATION FOR CONTEXT-BASED WATER TARGETS

As companies begin down the path of context-based water targets, the question of “how” quickly arises. While this paper does not seek to propose specifically “how” (indeed, we believe that such an answer must be developed jointly), we do feel it is helpful to explore some key foundational concepts. In particular, we feel that a scientific foundation offers the strongest basis for establishing such targets. A science-driven basis for carbon targets has proven quite effective for companies and other stakeholders and can offer insights as similar water-related approaches are developed. Specifically, over the past few years, we have witnessed the shift in the corporate landscape from arbitrary CO2 reductions (absolute and intensity-based), to “science-based targets” (see www.sciencebasedtargets.org) in an effort to link corporate carbon targets to meaningful science-based climate outcomes.

Water now stands to follow suit. As companies seek to reduce water risks, a broader science-based (and socio-economic-based) foundation for action is needed to ensure that shared water challenges are indeed being met. Science is critical to contextualize such issues, including shared water budgets and the ability of water bodies to absorb water pollution.

Science as a Foundation for Water Targets

Science can help to ensure a common and objective understanding of water. When managing a resource as contentious as water, using science as a starting point for goal-setting is critical. By the term ‘science’ here we refer to the factual basis for understanding the water system, including data on water use, availability and quality, which help bring objectivity to assessment and planning. There are several reasons science is so critical to the water stewardship target-setting process:

- Using science as a basis for target-setting removes the guessing game related to the type and extent of water targets appropriate within a given basin.
- Science connects management targets back to what is needed for the sustenance of ecosystems (including the services they provide) and communities.
- A shared understanding of the water system (which is tied to the public sector’s agenda as noted in Section 3) can provide a common basis on which all parties can begin discussions about how best to manage the highest priority challenges facing local water resources.

To illustrate the notion of science-based target-setting, we can look to how carbon emission reduction targets have evolved over recent decades. As our collective understanding of how to calculate the impacts of a range of activities on the global carbon budget has grown, governments, organizations and even individuals have been better informed in how they might ‘offset’ their individual impacts. Work of the IPCC (IPCC, 2014) and others has provided clarity on the connection between specific emission levels and on the ground impacts to temperature, ocean acidification, precipitation and other related effects that together comprise global climate change. This knowledge has helped inform global target-setting that aims to avoid extending greenhouse gas (GHG) emissions beyond specific boundaries, for example the Paris 2015 agreement to stay well below 2° Celsius change in global average temperature as compared to pre-industrial levels. Via the UNFCCC, these global targets are distributed out to national carbon emission reduction targets. Similarly, the SBT exercise looks to divide and parse out carbon emission reductions amongst sectors and companies to achieve those targets. This body of work led to the establishment of the Science-based Targets (<http://sciencebasedtargets.org/>) platform which was a joint initiative between CDP, UN Global Compact, WRI and WWF.

This progression mirrors that of water stewardship. As seen in Section 2, many current corporate water targets are focused on absolute or intensity (efficiency)-based targets. Even basin-linked targets focus (such as those focused on “balancing” water consumption by returning an equal volume) are not always context-sensitive (i.e., the balancing that occurs does not account for the location nor timing of water availability). However, targets that are developed with an understanding of the contextual impacts of water use, and through activities and management plans that actually reduce or mitigate these impacts, are much more effectual in achieving improved water management and in turn, decreasing water risk exposure.

Local Nature of Water

Although we can build on what we have learned in setting carbon goals among a diverse group of nations, it is imperative to understand that water is quite different from carbon in its localized nature. Whereas reducing carbon emissions or sequestering carbon in one area of the world can reap benefits for the rest of the globe, water targets are most meaningful when they are set on a local basin basis. Actions taken in one river basin are not likely to impact water availability or water quality in another basin. Furthermore, a large reduction in water use in a water-abundant basin may be less relevant than a small reduction in a water-scarce basin. This means that, although companies may opt to set enterprise-wide water targets (e.g., absolute, enterprise-wide water withdrawal reductions), it is vital that these targets are underpinned by a consistent process that accounts for water balance in the local context. Without the context, not only do global efficiency targets lack relevance to local stakeholders, but lack materiality to investors as they do not link back to water risk.

In turn, this approach can also be tied to the value chain. By combining life-cycle analysis tools (to understand where in the value chain water impacts occur), with detailed basin information (to understand the various competing physical and socio-economic water uses), one can ensure that corporate water targets are optimized on the water issues that are most material to the company and the basin.

Considering the context in a science-driven approach

Science is a critical basis for such approaches, but water is also informed by other socio-political aspects. Accordingly, we have opted to employ the term “context-based” rather than purely “science-based”. Furthermore, we believe that the following factors are all critical to developing science-driven, context-based water targets:

- Regulatory and institutional setting, including clear, enforceable regulations and strong, transparent management and governance institutions
- Physical setting, including any recent trends in water quantity, water quality and the needs (environmental flow requirements) and status of water-dependent ecosystems
- Best available forecasts for climate and future development
- The status of water-related infrastructure, including both grey and green infrastructure/ecosystem services
- Socio-cultural and community setting, particularly as it relates to impacts on people, including power imbalances
- Existing and ongoing water stewardship efforts, such as individual initiatives, collective action engagements and existing goals for the basin

Thankfully, recent years have not only seen the emergence of science-based approaches to tackle shared water challenges, but approaches that incorporate such contextual information into target setting. These include those outlined in (a) the CEO Water Mandate White paper entitled Understanding “Sufficiency” in Water-Related Collective Action (The Nature Conservancy, CDP, Pacific Institute, 2014) and (b) WWF’s Basin Report Cards. The recommended approaches are based on the concept of setting sustainability boundaries for a basin, within which all environmental and community needs are met. In this way, collective targets for staying within these boundaries can be developed, and each water user can then parse out their role in achieving these collective targets through their individual actions and proprietary targets. Moreover, it is precisely when these boundaries are violated that we see the emergence of physical, regulatory and reputational water risks. As such, we believe it is in companies’ interests to respect these boundaries and work to ensure all parties work towards common, context-specific, science-driven targets.

As demonstrated by the experience of the public sector implementing water projects (Section 3), a measurement and evaluation system that can inform all parties of the extent to which the outputs of their actions are resulting in the desired outcomes and long-term impacts, can provide significant benefits to all parties. The status of shared water challenges can be directly tied to water risk assessments when indicators and data are aligned. In fact, water risk baselines and updates can serve as a material and meaningful target against which collective progress is measured. As with the public sector, monitoring and evaluation will require sufficient resources along with the use of adaptive management approaches. The ongoing review and adjustment of water stewardship action plans will ensure they are more effective in mitigating and ultimately reducing water risks.

In summary, we believe that a science-driven, context-sensitive approach is the first step in establishing a robust context-based target methodology that has collective support.

5. EXPLORING CONTEXT-BASED WATER STEWARDSHIP TARGETS

The path to establishing a common methodology to context-based targets will not be simple, nor developed in isolation. It will require understanding current corporate targets, learning from the public sector, and looking to science as a cornerstone. As we begin down a collective journey, we recognize several obstacles facing companies and efforts that will need to be addressed:

- **Data, shared monitoring and determining allocations.** In many places around the world, there is a lack of sufficient water-related data to fully understand the local water resources, including trends over time and accurate measurement of potential risks. Even in regions with robust water management agencies, data may not be consistent over time or access to data may be a challenge. This deficiency in consistent water quantity and water quality data means that setting scientifically defensible targets based on local conditions is difficult. Furthermore, even with perfect data, there are challenges with shared monitoring (as noted in Section 3) and determining allocations is by no means straightforward.
Possible solutions: Move towards, and call for, greater water data liberation; align data use where possible; greater understanding of the experience in carbon around cap-and-trade/trading systems; sharing learnings from public sector experiences.
- **Local water resource systems are complex.** Complexity is daunting, time-consuming, and resource-intensive to navigate. However, taking action towards targets set based on an understanding of complex local basin conditions will reap a much higher return on investment than action planned without this understanding. For example, if a company sets a goal of a reduction by a certain percent of water use at all locations, but does not understand that in one or more locations they are facing water quality challenges that will eventually require an increase in treatment costs, they may not be making financially wise water sustainability investments.
Possible solutions: Work with the public sector and civil society to navigate local-level complexity.
- **The cultural status quo and communication barriers.** Companies have been measuring and reporting certain 'simple to understand' water metrics for many years (e.g., absolute water use and intensity). Changing metrics (especially to arguably more nuanced, complex metrics) can be challenging due to various reasons including requests from disclosure initiatives, consistency of reporting year-over-year, a lack of understanding from investors and customers, and simple cultural inertia. Furthermore, there are few examples of strong enterprise-wide, context-based targets by leading companies that others can follow. Water use reporting remains important, but the status quo needs to be nuanced to become more meaningful to companies, stakeholders and investors.
Possible solutions: Work together to educate all parties on more meaningful metrics and shift the status quo; collectively identify strong examples of existing or potential enterprise-wide, context-based targets and associated indicators.
- **The value of water.** Water is often inexpensive to procure (even free) and accordingly, senior management within a company may not be seeing water targets as material and prioritize the additional effort that comes with context-based water targets. Carbon, which is tied to energy (often a material cost), stands in contrast to water. Water use and impacts have hidden costs connected to energy, but investors and corporate leaders may not always understand these linkages.
Possible solutions: Continue to highlight how water affects the present and future financial value of corporate operations to senior management and investors; link water risk tools to valuation and the business case for water stewardship.
- **Local stakeholder engagement.** Context-based goal setting requires more local involvement, potential engagement with stakeholders, and getting involved in the details of the local water resources. While water risk assessments are a strong start, detailed local understanding only comes through engagement. Companies may struggle with the time commitments, knowing how, having appropriate fora through which to engage, having the right skills in place, etc. These hurdles may result in them preferring to set global context-independent targets, rather than get involved in the complexities of the local situation. However, this process of local engagement is critical to identify, mitigate and reduce water risks. In the long run, stronger local relationships and an ongoing understanding of water resource trends, can also help local managers identify new water risks early on.

Possible solutions: Drawing from lessons learned from the carbon-focused Science-Based Targets initiative, build toolkits for companies and local managers to appropriately engage stakeholders; help to catalyse suitable for a for engagement

Despite these challenges, a number of useful starting points exist that can inform collective approaches, rooted in a context-based approach. For example, the CEO Water Mandate's Guide to Water-Related Collective Action (Ross Strategic, 2013) and the Alliance for Water Stewardship Standard (Alliance for Water Stewardship, 2014) offer insights into aspects of how companies can develop context-based targets. In addition, it is worth building off the efforts of leading companies on basin-linked targets (e.g., water balance targets, source water protection, etc.), and exploring emerging examples of corporate-wide context-based targets (e.g., source vulnerability assessments completed for all high-risk sites).

This paper does not seek to propose a methodology (although the authors support the development of one), but we do believe that a consistent, shared approach would benefit companies, especially if built through consensus. We believe that such a methodology would be well served to take the following into consideration:

- **Integrated river basin priorities.** Water stewardship targets need to be established in a social, economic, and political context in which food, energy, water and ecosystem security for all is in balance.
- **Science-based and contextual.** Meaningful targets need to be founded in scientific understanding as well as in the political and hydrological context to ensure sustainability, protect human rights, and when possible align with ongoing public policy and private sector initiatives to build upon ongoing work and drive increased collective action.
- **Multi-issue.** Water stewardship outcomes must align with the six areas outlined in SDG6, including: access to improved drinking water, access to adequate sanitation and hygiene, water availability, water quality, water governance, and freshwater-related ecosystems.
- **Equitable allocation rooted in good water governance.** The level of ambition for context-based water targets must be informed by the company's share of responsibility in reversing water impacts and mitigating shared risk, and be tied to notions of good water governance.
- **Data constraints and needs.** Data remains a critical element in any context-based target approach and any proposed approach must be realistic about what is viable for all parties at present and in the near-term, but also where possible, link to shared monitoring systems and encourage water data liberation.
- **Business-relevant.** In order to achieve private sector engagement in operating within basin sustainability boundaries for water and meeting SDG6, context-based water targets must be applicable within the reality of business decision-making and tie back to water risk and investor concerns. Target setting needs to be supported by measurable, meaningful and pragmatic methodologies for corporate, regional, basin, and site levels and across a full value chain, from raw material sourcing all the way to consumer product use.

Moving forward, the shared nature of water challenges means that no single government, sector of society, or company can fully mitigate the water risks it faces on its own. Coordinated, consistent, context-based water stewardship targets applied across the public and private sector are ultimately needed to reduce water risks facing businesses, protect water resources, secure stable regulations, rules, laws and governance of shared water resources and ultimately meet the long-term water needs of companies, society, and the environment. To develop an approach that works for companies, but also their stakeholders, it will require a collective methodology.

6. CONCLUSION

The evolution of the understanding of water by the private sector has grown considerably in recent years. The rise of water stewardship and with it, the understanding of the importance of water risk assessments is fast becoming a mainstream practice. As a deeper understanding of water issues emerges, so too does the realization that to properly

mitigate and ultimately reduce water-related risks, companies must begin to address the underlying shared water challenges and engage local stakeholders on issues such as WASH, water quality, water balance, water governance, and freshwater ecosystems. Corporate water stewardship has evolved to a point that context-based water targets are the next logical step.

With the launch of the SDGs (and specifically SDG6), the private sector faces a unique opportunity to align corporate water target setting to a common framework that contributes to commonly accepted global water development priorities. A common framework will help to ensure meaningful contributions to publicly-accepted water development targets, while simultaneously driving improved efficiency, effectiveness and measurable progress. Furthermore, the public sector and civil society will also reap significant benefits, while DBs and GDAs will be able to focus investments to scale impacts and benefit a broader array of stakeholders, including corporations.

Science is a key basis for context-based water targets, targets become more meaningful, defensible and ultimately relevant. Data, along with resourced monitoring and evaluation systems will be critical to establish water system boundaries (on water balance, water quality and water ecosystems) and in turn, allow each water user to parse out their role in achieving these collective targets (water governance). Such an approach will not only help all stakeholders to objectively measure progress towards improvement in shared water challenges, but also allow companies to track a reduction in water risks, address investor concerns, and maintain profitability.

In summary, this paper calls for companies to:

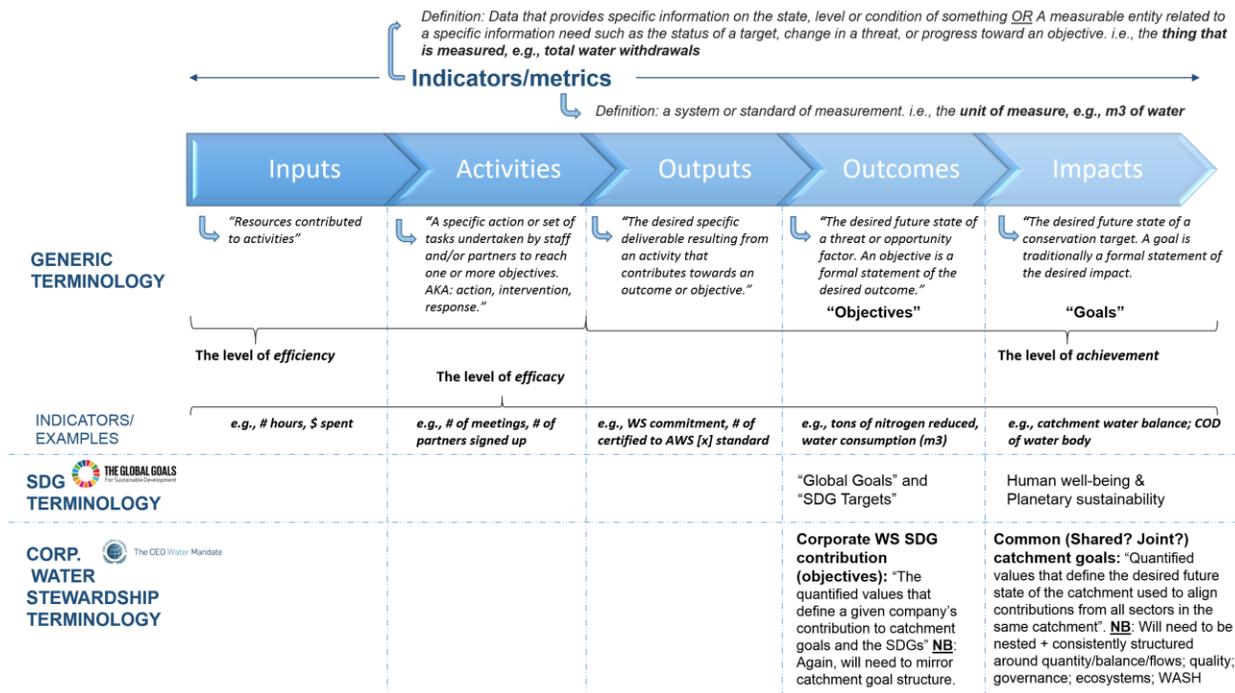
- Shift away from a reliance upon internally-focused metrics, such as water efficiency, and towards the use of more meaningful context-based water targets that address shared water challenges and ultimately water risks
- Align water stewardship strategies (and targets) to frameworks tied to the public sector's efforts, including the areas within SDG6 (namely WASH, water balance, water quality, water governance and water-related ecosystems) and relevant local water governance initiatives in an effort to provide consistency, clarity and further reduce reporting burdens.
- Encourage companies to join us in developing a science-based approach, informed by learning from the public sector and tied to shared monitoring systems, that collectively moves us towards meaningful, and sustained outcomes at the basin level that effectively reduce water risks.

Finally, this discussion paper aims to build consensus among corporate audiences on the need for a consistent approach to setting science-driven, context-based water targets that are aligned with SDG6, and help to more effectively deliver on corporate objectives. We encourage those reading this paper to consider the following questions as we undertake next steps:

1. To what extent are corporate water stewardship targets aligned with public sector policy priorities (SDG oriented, basin-specific, or other)? Is it possible and feasible to use SDG6 as a framework to align private and public sector water targets?
2. In your efforts to consider more context-based approaches to setting targets, what is most challenging? What are the biggest barriers to moving towards more context-based target setting approaches?
3. Can SDG-aligned, context-based water targets advance meaningful action toward more sustainable water management and reduce business risk? If yes, what is needed to mobilize companies in this direction?

We encourage your feedback on this paper and then to join us in the development of a methodology in late 2016 (subject to funding). If you are interested in participating in the next phase of work, please contact Alexis Morgan (amorgan@wwfint.org) or Paul Reig (preig@wri.org) for more details.

Appendix 1. Performance Monitoring



Appendix 2: SDG6 Targets

By 2030:

6.1 Achieve universal and equitable access to safe and affordable drinking water for all

6.2 Achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

6.3 Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

6.4 Substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

6.5 Implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

6.6 Protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

6.a Expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling & reuse technologies

6.b Support and strengthen the participation of local communities in improving water and sanitation management