BEVERAGE INDUSTRY
ENVIRONMENTAL ROUNDTABLE

Insights and Opportunities

Performance in Watershed Context

BIER Water Working Group, *October 2017*

Insights and Opportunities:

An Initiative of the Beverage Industry Environmental Roundtable (BIER)

The purpose of this paper is to share, in a clear and concise format, insights BIER has accumulated from developing and pilot testing a decision support process to assist companies with making more informed water-related investments across a portfolio of operational sites.

This initiative was driven by the need for a practical perspective on the concept of context-based decision making and targets: a fresh, pragmatic method, one that is effective but resource efficient, which results in a clearer and more comparable understanding of watershed impacts and dependencies at the facility level.

The desired result is for companies to be better positioned to make 'surgical' investments that accelerate water stewardship and security strategies and actions that result in meaningful impacts at the watershed level.

Areas of Insight

About BIER

The Beverage Industry Environmental Roundtable (BIER) is a technical coalition of leading global beverage companies working together to advance environmental sustainability within the beverage sector. BIER aims to effect sector change through work focused on water stewardship, energy efficiency and climate change, beverage container recycling, sustainable agriculture and eco-system services.

Vision
The beverage industry is globally recognized as the leader in advancing environmental sustainability.

Mission
BIER brings together global leaders in the beverage industry to advance the sector's environmental sustainability.

BIER Members
BIER is made up of 19 leading global beverage companies representing:

- Beer, Bottled Water, Carbonated Soft Drinks, Juice, Tea, Coffee, Spirits and Wine Categories
- Over $260B in combined annual revenue
- Over 2,100 facilities across 170 countries
- Over 5,600 distinct brands

Want to join the conversation?

Please contact Nick Martin, BIER Associate Director, for more information.

What is watershed "context"?

Foundational Achievements

Beverage companies have been the leader in understanding and managing water risks and opportunities including, the following achievements:

- Developed and maintained a comprehensive framework for Water Stewardship in the Beverage Sector;
- Managed the most comprehensive quantitative benchmark study of water use and efficiency in the beverage industry of over 1,500 facilities across six continents representing 19 member beverage companies;
- Defined consensus methodology for Water Accounting in the Beverage Sector;
- Developed a True Cost of Water Toolkit to support acceleration of water investments;
- Shared water optimization best practices between member companies;
- Developed detailed guidance for managing water-related business risks and opportunities; and
- Conducted 100's of Watershed Assessments throughout the world.

While these efforts are meaningful and have significantly advanced corporate water stewardship, BIER members realize more is needed to further accelerate efforts to meet increasingly complex challenges and ultimately achieve water security in communities where they operate.

Maintaining Leadership

BIER members understand that pursuing water stewardship and security is a journey. While BIER's efforts in this space have been meaningful, maintaining leadership requires a continued focus on innovation at a pace that meets not only the challenges of today but also those we will be facing tomorrow.

The individual and collective efforts of BIER members to date have validated the increasingly complex and locally dynamic nature of water-related challenges and opportunities. The sustainability of communities, watersheds, and business operations ultimately requires location-specific assessment, actions, and investments.

BIER identified a potential missing piece to existing water stewardship tool and guidance: a pragmatic process to make more informed decisions on watershed-specific actions and investments across a portfolio of sites. Specifically, a process that integrates watershed ‘context’ into decision making and site-specific performance expectations.

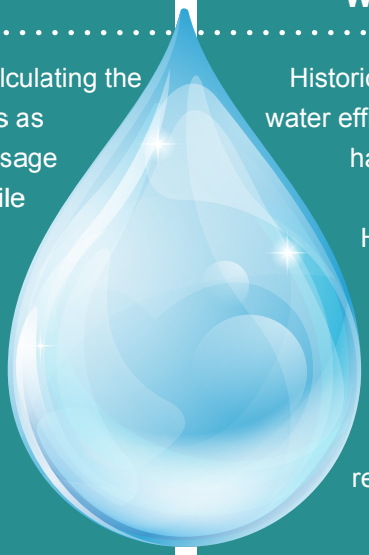
Integrating watershed ‘context’ into decision making processes could be a missing piece to further accelerating the pace, scale, and impact of water stewardship actions and investments. The lack of reliable scientific water data at the local level remains a constraint in scaling this initiative.

Our Ah-Ha Moments

BIER members experienced two important ‘ah-ha’ moments which formed the basis of this initiative:

Water Accounting

For a period, there was a strong focus on calculating the volumetric water footprint of various products as a means to understand and reduce overall usage and impact. BIER members realized that while the foot ‘size’ was important in terms of volume of water used to develop a product (raw materials to end user), what was missing was the foot ‘print’ in terms of how the water use positively and negatively impacted particular watersheds and communities.



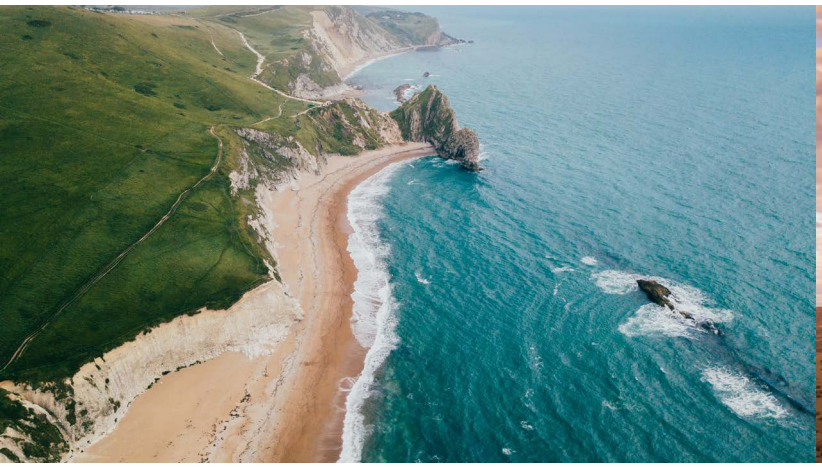
Water Use Ratios and Efficiency Goals

Historically, beverage companies have focused on water efficiency metrics and goals. Many companies have implemented more aggressive goals for operations in water-stressed geographies. However, should two similarly sized facilities with nearly identical water use efficiencies still be considered the same from a performance and expectation standpoint? What about geographies that face water quality challenges? Municipal infrastructure reliability and capacity limitations? Ineffective water governance?

Traditional approaches and metrics lack ‘context’ on how facilities and their supply chains interact with relevant communities and watersheds, and are therefore limited in the ability to comparatively assess water-related risks and opportunities facing a portfolio of sites and defining the ‘right’ facility performance expectations and priority investments.

Understanding Context

Let’s consider a hypothetical facility located in the following two locations:

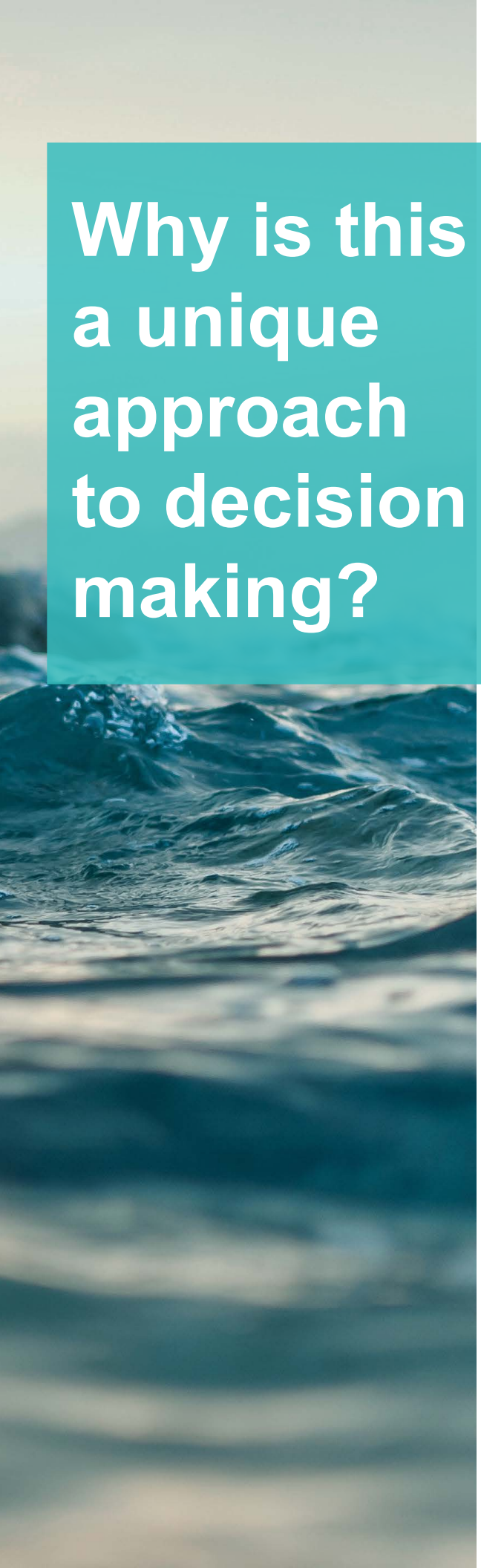


Location #1: an island surrounded by water, but available water is expensive to treat, utilize, and distribute.

Location #2: an arid environment with constrained resources that must be equitably utilized. Long-term availability of water is the major concern.

- Are the water-related challenges faced by these facilities and the local communities identical?
- Are the degree of impacts on the local watershed from the facility’s water use the same?
- Should these two facilities be expected to have the same water efficiency goals?
- Should the water-related investments a company makes in these facilities be the same and focused on similar risks and opportunities?

For many companies, especially those with facilities all over the world, considerations of this nature span 10’s of 100’s of unique scenarios that must be defined and are fundamental for making more informed and targeted investment decisions. The outcome should therefore be improving contextual performance in priority and high-risk local watersheds, rather than developing aggregated global targets.

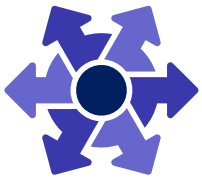


Why is this a unique approach to decision making?

Practicality

To be effective, the decision support process must be able to drive more informed decisions across 10's of 100's of unique operating conditions globally and support increasingly complex investment decisions facing beverage companies.

A unique approach is required – one that is:



Not too complex – making the process too sophisticated would result in expending too much time and resources on assessment and limiting implementation bandwidth.

Not too simple – local watershed 'context' conditions and variables are complex and require a holistic perspective to be effective.

BIER's approach must balance defined objectives in a manner that is implementable and does not overwhelm operating locations or result in too much focus on analysis vs action. At the same time, it should lead to specific, targeted actions.

Multiple Perspectives

To achieve context-based decision making requires a holistic, multi perspective, comparative approach to understanding localized watershed conditions. An approach that considers:

- Physical Water Aspects (e.g., water availability and sourcing options; water supply reliability; quality of local water sources; wastewater discharge and treatment; and climate variability)
- Regulatory Aspects (e.g., local governance and regulations; water costs; discharge requirements)
- Social and Reputational Aspects (e.g., water users; economic development; supply vs demand)

A unique aspect of BIER's initiative is to broaden traditional water risk thinking to consider two important perspectives:

- **Watershed Impacts** – How do facility operations impact, positively and negatively, the local watershed short- and longer-term.
- **Watershed Dependencies** – How are facility operations dependent upon the local watershed for business continuity and longer-term business sustainability.

Pursuing this effectively requires understanding more than business risks, with a focus on the operations overall or holistic relationship with the local watershed and community.

Top-down Versus Bottom-up

BIER acknowledges that there are various parallel initiatives underway by companies and other related stakeholders. Many of these initiatives are focused on defining broad-based, volumetric watershed threshold values (e.g., total volume of water available in a watershed) and then using these thresholds to define equitable water use allocations for agriculture, industry, and domestic users. While such thresholds can be informative to understand proportional use of water compared with other users and the total available water within a watershed, such values only take into account water quantity and not other important and interrelated aspects. BIER's approach complements these 'top-down' methods by offering a 'bottom-up' approach that introduces a broader set of location-specific variables into the decision making and target setting equation.

The CEO Water Mandate

The CEO Water Mandate has led a coalition of leading NGOs with "Exploring the Case for Corporate Context-based Water Targets". The Mandate has published several Discussion Papers over the past year, which include profiles of related initiatives.

BIER sees an opportunity to develop a complementary method that takes into account the localized nature of water impacts and dependencies from a bottom-up approach that considers not only water availability but also other critical dimensions necessary to understand and comparatively assess the more holistic watershed context.

Informed and Optimized Decisions

This approach leads to more effective evaluation of potential watershed-level actions across a portfolio of facilities and 'surgical' decisions on where to optimize invests inside and/or outside a given facility:

Facility Actions (Inside): actions that reduce a facility's operational impacts and dependencies on the local watershed.

Watershed/Community Actions (Outside): actions and engagements that support the security and sustainability of the local watershed and surrounding community.

To be effective, BIER's approach must take into account the needs, maturity, and capacity of the facility and community stakeholders to define the most meaningful actions and investments which could result in independent efforts by the facility and/or working in collaboration with local stakeholders.

What method did BIER utilize to develop insights?

Technical Advisors

Desiring stakeholder participation and expert perspectives from outside the beverage industry, BIER partnered with key Technical Advisors:

Ceres – A sustainability nonprofit organization working with the most influential investors and companies to build leadership and drive solutions throughout the economy. Through powerful networks and advocacy, Ceres tackles the world's biggest sustainability challenges, including climate change, water scarcity and pollution, and human rights abuses. Ceres mission is transforming the economy to build a sustainable future for people and the planet. www.ceres.org

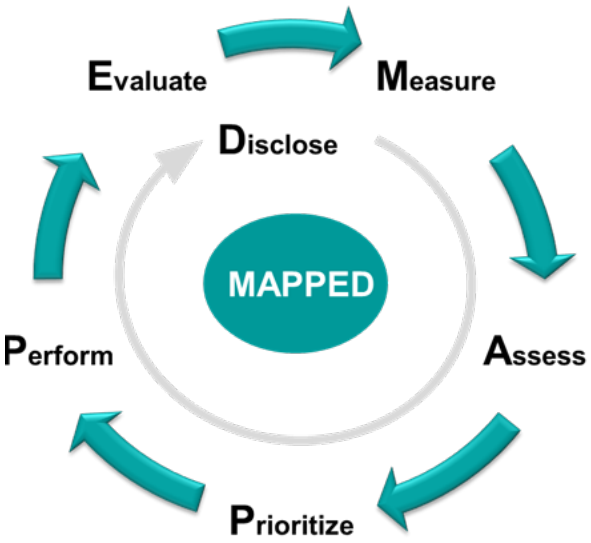
The Nature Conservancy (TNC) – Works around the world to protect ecologically important lands and waters for nature and people. www.nature.org

World Resources Institute (WRI) - Works closely with leaders to turn big ideas into action to sustain a healthy environment—the foundation of economic opportunity and human well-being. www.wri.org

Given the complexity of this topic and desire to make this relevant beyond the beverage sector, BIER views collaboration and open sourcing as critical success factors.

MAPPED Framework

Needing a systematic way to approach this initiative, the team collaborated to develop a guiding 'MAPPED' framework:



Measure - Collect quantitative and qualitative data with a focus on measuring facility performance and watershed context in a consistent, meaningful, and comparable manner.

Assess - Combine, pattern, and analyze the data and indicators to understand the relationship between performance, dependencies, and impacts for a given facility.

Prioritize - Interpret the assessment results in order to prioritize investments and actions across the set of facilities being evaluated.

Perform - Define and implement prioritized actions and investments at the facility and/or in partnership with watershed stakeholders.

Evaluate - Monitor and evaluate the implementation and effectiveness of defined actions or investments to ensure meaningful results.

Disclose - Appropriately share 'Performance in Context' information with key internal and external stakeholders.

Core Impacts and Dependencies

BIER's Technical Advisors recommended starting with a concise initial set of indicators for 'impacts' and 'dependencies'. To accomplish this, the team used a hypothetical visual of a watershed and beverage facility to work through initial indicators:

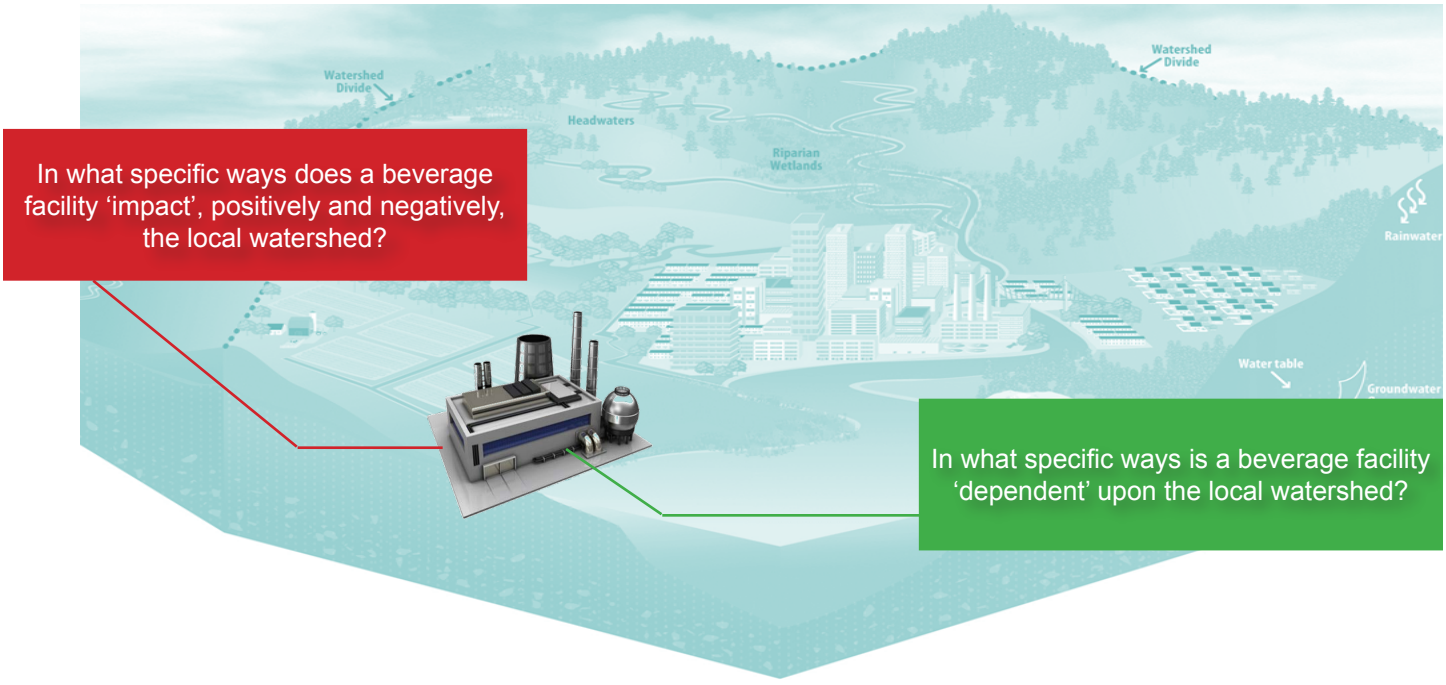


Image sourced from the Michigan Sea Grant, An Introduction to Michigan Watersheds: A Guide for Teachers, Students and Residents. http://www.miseagrant.umich.edu/lessons/files/2013/05/10-728-How-A-Watershed-Works.jpg

Initial Indicators

BIER's team defined the following 9 indicators for tool development and pilot testing.

Initial 'Impact' Indicators

- What is the facility's share of water withdrawal compared with other watershed users?
- Does the facility source water from a sensitive water source(s)?
- Does the facility source water intensive raw materials from within the *same* watershed?
- Does the facility export products with embedded water to another watershed?
- Does the facility's discharge impact (+ or -) the watershed, directly or indirectly?

Initial 'Dependency' Indicators

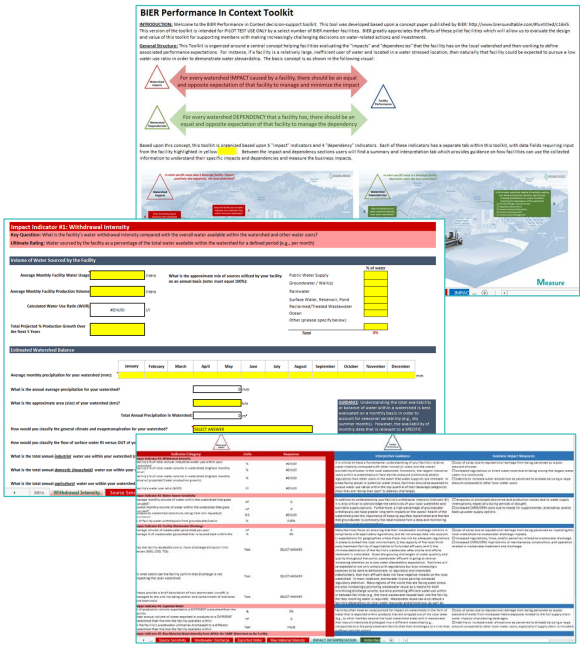
- Is the facility's water source(s) reliable in terms of consistent flow, pressure, and distribution?
- Is the quality of water consistent and treatable?
- Is the broader watershed capable of equitably meeting user demand (industrial, domestic, agricultural), including consideration of unique conditions impacting the dependency of the watershed (e.g., climate change and episodic events, regulatory governance, social awareness and opposition, economic development, infrastructure)?
- Does the facility source water intensive materials from *other* watersheds?

While a good start, the above indicators should NOT be considered final and have NOT been formally adopted by BIER members based upon insights achieved. Further refinements are required.

Workbook and Pilot Process

BIER's initial indicators were converted into a workbook that was piloted by a representative set of global beverage facilities focused on gaining insights on:

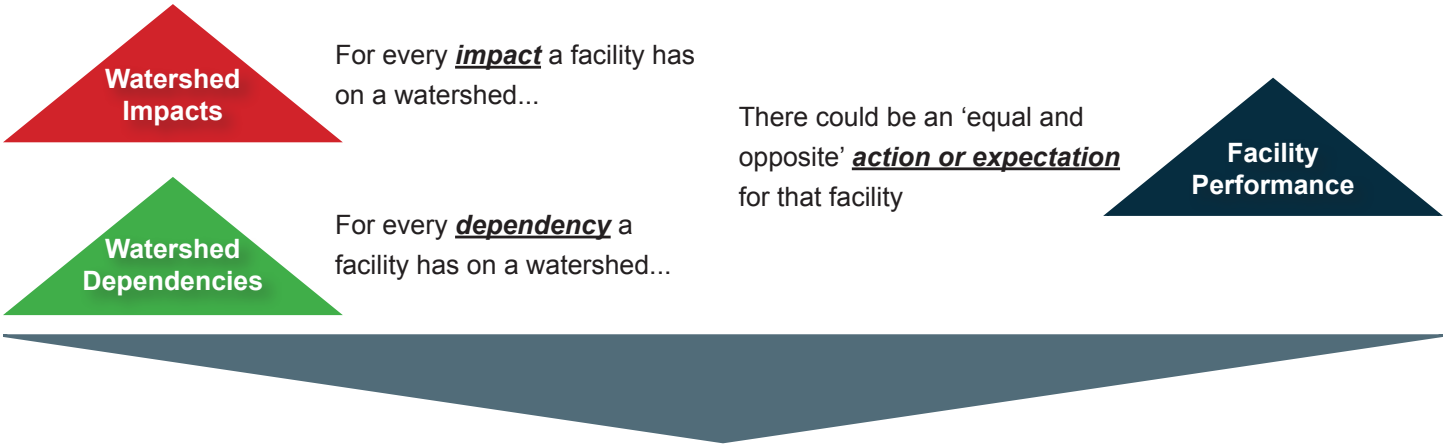
1. Appropriateness of the initial indicators in assessing key impacts and dependencies;
2. The required data collection effort for individual facilities and the availability of requisite data especially at the watershed level;
3. The functionality of the workbook and the integrity of the calculation and rating formulas; and
4. User experiences and insights gained, including the business value for the facility and associated company.



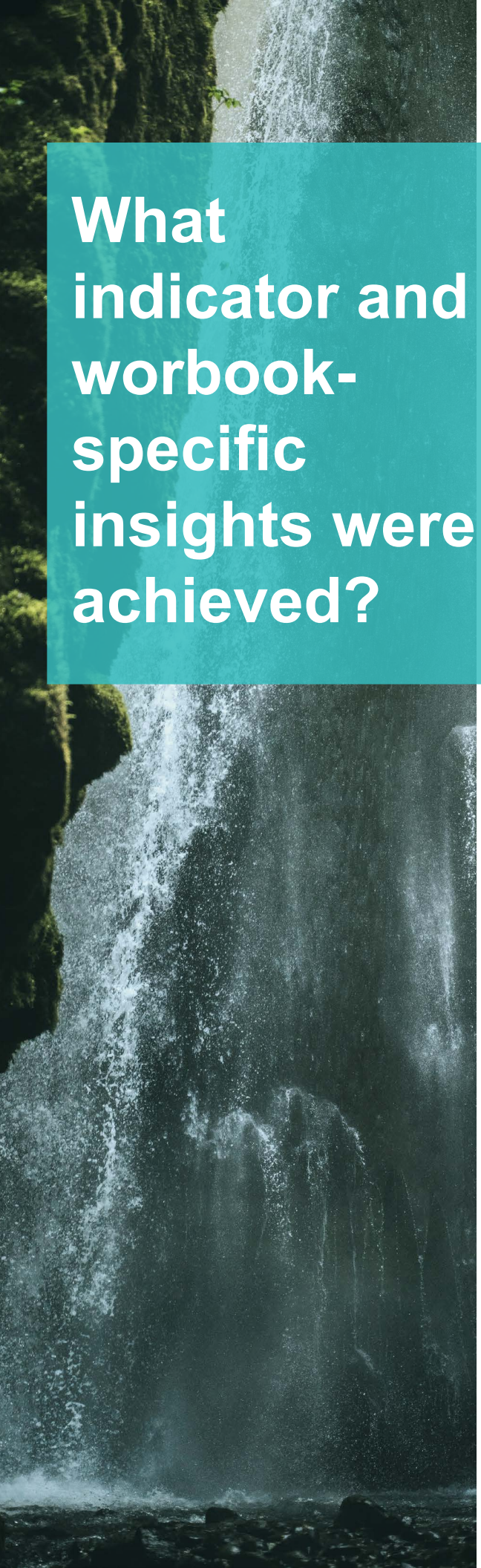
The tool was very useful in initial testing of the concept and methodology, but several refinements were identified. We also recognize that any tool is only as good as requisite data inputs are available which was identified as a critical gap and priority next-step focus.

Defining Investments and Expectations

The underlying philosophy behind BIER's approach is to utilize the outputs from the indicators and workbook to more precisely define facility-level performance expectations based upon specific watershed impacts and dependencies. A simple way to think about this is to borrow from Newton's 3rd Law: "For every action, there is an equal and opposite reaction".



This concept has really resonated with BIER members as a way to understand the intention of context-based decision making and focus in on the most relevant facility-specific investments in a consistent, comparable, and justifiable manner.



What indicator and worbook-specific insights were achieved?

Key Insights

The most insightful direct feedback from pilot facilities was:

Positive Feedback

- Sites had not previously collected much of the information, so new perspectives were introduced. It also triggered new thinking and external research on local watershed considerations.
- The business connections and potential business impact measures reinforced the importance and relevance of watershed impacts and dependencies at a local, operational level.
- Data entry (once collected) and functionality were generally solid within the workbook tool.

Opportunities for Improvement

- Rolling out “another tool” is always a challenge for companies.
- Not intuitive enough for “cold” users – requires more guidance, time, and resources to collect data, and in some cases outside expertise, especially for watershed data and analysis.
- Fundamental data not consistently or readily available, even for developed geographies (e.g., water use data). Delineating data to a specific watershed adds extra complexity.
- Users expect immediate feedback, results, and recommended actions.

While a good start, the above indicators should NOT be considered final and have NOT been formally adopted by BIER members based upon insights achieved. Further refinements are required.

Value of Initial 'Impact' Indicators

Initial Pilot Indicators	Potential Value	Difficulty	Insights
What is the facility's share of water withdrawal compared with other watershed users?			This is an important reference for a facility, but it is difficult to retrieve necessary up-to-date data delineated to a specific watershed or basin.
Does the facility source water from a sensitive water source(s)?			This is a fundamental and widely used indicator by beverage companies to evaluate the relative water risks and opportunities for facility locations.
Does the facility source water intensive raw materials from within the same watershed?			The value depends upon the raw material, processing practices, and associated water intensity. Raw material supply also varies in quantity and source over time, making this indicator difficult to consistently track and manage.
Does the facility export products with embedded water to another watershed?			The distribution of products varies considerably and the volume of water is limited compared to other variables resulting in lower return on effort.
Does the facility's discharge impact (+ or -) the watershed, directly or indirectly?			Wastewater discharges are regulated and generally well managed in most parts of the world; however, evaluating the + or – impacts on the greater watershed can be challenging.

Value of Initial 'Dependency' Indicators

Initial Pilot Indicators	Potential Value	Difficulty	Insights
Is the facility's water source(s) reliable in terms of consistent flow, pressure, and distribution?			This indicator is very important from a business continuity perspective and is easily measured with incoming water meters and direct engagement with water providers.
Is the quality of water consistent and treatable?			This indicator is also very important from an operational perspective and is continuously monitored and utilized to execute water treatment processes and track operational costs.
Is the broader watershed capable of equitably meeting user demand (industrial, domestic, agricultural), including consideration of unique conditions impacting the dependency of the watershed?			This indicator is one of the most critical and challenging elements of understanding watershed 'context', especially with a long-term perspective on economic development, infrastructure, demographics, and climate change. One key challenge is simplifying this into a manageable set of input data and quantified output.
Does the facility source water intensive materials from other watersheds?			The relevance of this indicator depends upon the company and products produced. The importance of the insight is to recognize that the facility's dependence could be on multiple watersheds.

Forward Looking Insights

While many insights were achieved through the methodology development and pilot processes, the following are the most significant from a BIER member perspective, and serve as guidance for determining how to evolve this initiative:

1. *The dynamic and local nature of watershed conditions requires an agile approach to effectively instill context-based decision making for global companies operating in hundreds of local contexts. The challenge is defining an approach that prioritizes the most meaningful investments in a manner that balances available watershed expertise, alignment with company-specific risk management and business planning processes, as well as day-to-day operational realities and resource constraints at the facility level.*

2. *Context-based thinking provides an important, fresh, and holistic perspective on watershed conditions which leads to more informed decisions on potential actions, investments, and collaborations. The 'bottom-up' approach is appropriate, necessary, and provides a logical leadership opportunity for the beverage sector.*

3. *Watershed-specific data necessary for context-based decision making is not consistently or readily available globally. Addressing this gap is a foundational challenge to developing a consistent, comparable, and effective methodology.*

This last point is what BIER has defined as the most critical opportunity for progress, focused attention, and collaboration with other interested stakeholders.

Where does BIER aspire to go next?

Next Steps

BIER has defined the following next steps in our continued pursuit of defining a practical approach to context-based decision making and collaboration with interested stakeholders:

1. Given the lack of reliable scientific water data at the local level remains a constraint on scaling this initiative, BIER will conduct a gap analysis process to more specifically define the desired watershed-level input data versus the availability of existing data across BIER member companies and leading sources. *(Targeted Timeframe – Initiate Immediately)*

2. BIER will share the outputs of the gap analysis process with our Technical Partners, leading water organizations, and other interested stakeholders as a catalyst for collective action to address the lack of scientific water data at the local level. *(Targeted Timeframe – Q1 2018)*

3. BIER will continue to maintain open dialogue, support knowledge exchange, and enhance working relationships with related initiatives and interested stakeholders to advance context-based decision making within the beverage sector and beyond. Specific focus areas, based upon current insights, include: a) support consensus building on methodology; b) further explore practical implementation of context-based decision making assuming ideal data existed; and c) advance business case rationale including connections to SDGs. *(Targeted Timeframe – Ongoing Throughout 2018)*

4. BIER members will continue to actively seek, individually and collectively, collaborative partnerships at a catchment level to implement a context-based approach together with interested stakeholders. *(Targeted Timeframe – Ongoing)*

For more information, please contact Nick Martin, BIER Associate Director, at info@bieroundtable.com.

BEVERAGE INDUSTRY ENVIRONMENTAL ROUNDTABLE

www.bieroundtable.com | info@bieroundtable.com | @BIERoundtable

AB InBev
BACARDI
Beam SUNTORY
BROWN-FORMAN
Carlsberg Group
The Coca-Cola Company
Constellation Brands
DANONE waters
FETZER VINEYARDS
DIAGEO
HEINEKEN
NEW BELGIUM BREWING
MOLSON Coors
Jackson FAMILY WINES
MillerCoors A MOLSON Coors COMPANY
Pernod Ricard
Ocean Spray
PEPSICO
AMERICAN BEVERAGE ASSOCIATION