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Water Stewardship in Action

Sustainable Practices for the Food and Drinks Industry

May 2024

SLR

Emily Owen

- Chartered Water and Environmental Manager, Chartered Environmentalist and Charted Scientist specialising in water management, flood risk management and Environmental Impact Assessment.
- Experience in a range of sectors and has built her knowledge, experience and capability for setting water management to improve climate resilience through catchment and stakeholder-based solutions.
- Undertaken training in Environmental Economics to communicate water risk in traditional business terms aiding decision makers to appropriately assess their opportunities and risks. I am also a professionally credentialed specialist through the Alliance for Water Stewardship.

Ian Andrews

- Chartered Chemist with over 40 years' experience in the water industry.
- Following 20 years in the wastewater operations business at Yorkshire Water including a period as a Trade Effluent Control Manager, Ian moved into consultancy and has subsequently supported industrial clients with water and wastewater issues across Europe, the United States, China, Brazil, Australia and sub Saharan Africa.

SLR

A balanced, successful and growing business;
for our people, clients, investors and communities.

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- Soil Science

What is Water Stewardship?

*"Water Stewardship is the use of water in a way that is socially equitable, environmentally sustainable, and economically beneficial. This is achieved through a **stakeholder inclusive** process that involves site and **catchment-based actions**." – United Nations Industrial Development Organisation*

- Maximising internal opportunities for water efficiency and protection of water resources,
- Acknowledging the interdependency of all water users,
- Sharing the cost of managing and protecting water resources,
- Utilising the influence of collective action,
- Greater understanding of business risks

Water Stewardship vs. Traditional Water Management

Water Stewardship

- Holistic Approach
- Collaborative Engagement
- Long-term Sustainability
- Certification and Standards

Traditional Approach

- Efficiency and Cost Focus
- Top-down Decision Making
- Compliance with Regulations
- Short-term Goals

Why water stewardship important now?

Social setting – consumers and investors have higher expectations for their products

Climate change – the water cycle is becoming more extreme with more periods of excess and water scarcity

Protection of Long-Term Resource and Business Continuity

Market Differentiation - as other companies in the industry increasingly focus on sustainability, you could fall behind the normal levels.

Legislative and regulatory context

Global Water Regulations and Initiatives

- United Nations Sustainable Development Goals – SDG 6
- Paris Agreement
- Water Framework Directive
- Corporate Sustainability Reporting
- Circular Economy Initiatives
- Local Water Management Regulations and Constraints

Catchment Risks to Food and Drink Industry

Water Scarcity

- Higher concentration of pollutants
- Agricultural Supply interruption and price volatility
- Increased Competition for Water
- Restrictions to Growth
- Reputational Risks
- Employee Impact

Excess Water

- Supply disruption
- Flooding of facilities
- Contamination and Water Quality Impacts
- Restrictions to growth
- Employee Impact

Specific Business Risks to Food and Drink

- Reputational Risk – River Wye Chicken Farm pollution incident
- Reduction in productive land – creation of buffer zones
- Meeting hygiene standards
- Water companies and Regulatory Restrictions to Supplies
- Water Chemical Composition Variation
- Supply disruption – both from water scarcity and excess

https://www.slrconsulting.com/insights/why-your-business-should-be-concerned-about-water-stewardship/

https://www.icheme.org/media/4808/an-icheme-green-paper-water-management-in-the-food-and-drink-industry.pdf

Benefits of water stewardship to Food and Drink Industry

- Prevent scarcity and ensure continued supply.
- Increased security in the supply of primary products.
- Assure product quality
- Focussed investments on impactful water efficiency measures.
- Identify cost-saving measures concerning water use.
- Enhance brand
- Make informed decisions based on stakeholder needs and perspectives.
- Build positive relationships with businesses and communities in catchments including key suppliers.
- Can provide interconnectivity between large water consumers.

How to start?

Consider where you already are?

Global Risk Screening

Identify what resources and potential influence your company have in different locations

Consider where you might have cumulative risk factors

Focus on facilities that are highest risk and / or greatest benefit for investment.

Griffith Foods – Global Water Scarcity

Challenge

Griffith Foods specialize in high-quality food ingredients and identified water scarcity as a global priority, setting a Climate Action goal to reduce any unsustainable water use by 50% by 2025 and achieve sustainable water use in all water-stressed areas by 2030.

Approach

SLR help companies use water in a way that is socially and culturally equitable, environmentally sustainable, and economically beneficial. We develop enterprise water targets, informed by catchment context, that are aligned with the Alliance for Water Stewardship.

Our assessments:

- Model water risks at any location globally and prioritises facilities and operations based on their business relevance and/or exposure to water-related risks;
- Monetise the water related risks, taking into account the full value of water, including environmental and health related impacts; and
- Calculate sustainable water withdrawal targets that bridge the gap between corporate goals and on-the-ground action, offering practical guidance for smart, sustainable water practices.

Quantifying Water Risk

We can model a range of physical, regulatory and reputational risks.

Physical Risk Quantity - risks related to too little or too much water. Eight physical risk indicators, including risk of flooding, drought, water depletion and groundwater table decline.

Physical Risk Quality - risks related to water that is unfit for use, including untreated connected wastewater and coastal eutrophication.

Regulatory & Reputational Risk - risks related to uncertainty in regulatory change, as well as conflicts with the public regarding water issues.

Overall Water Risk - all water-related risks, aggregating 13 water risk indicators, including water quantity, water quality, regulatory and reputational risks

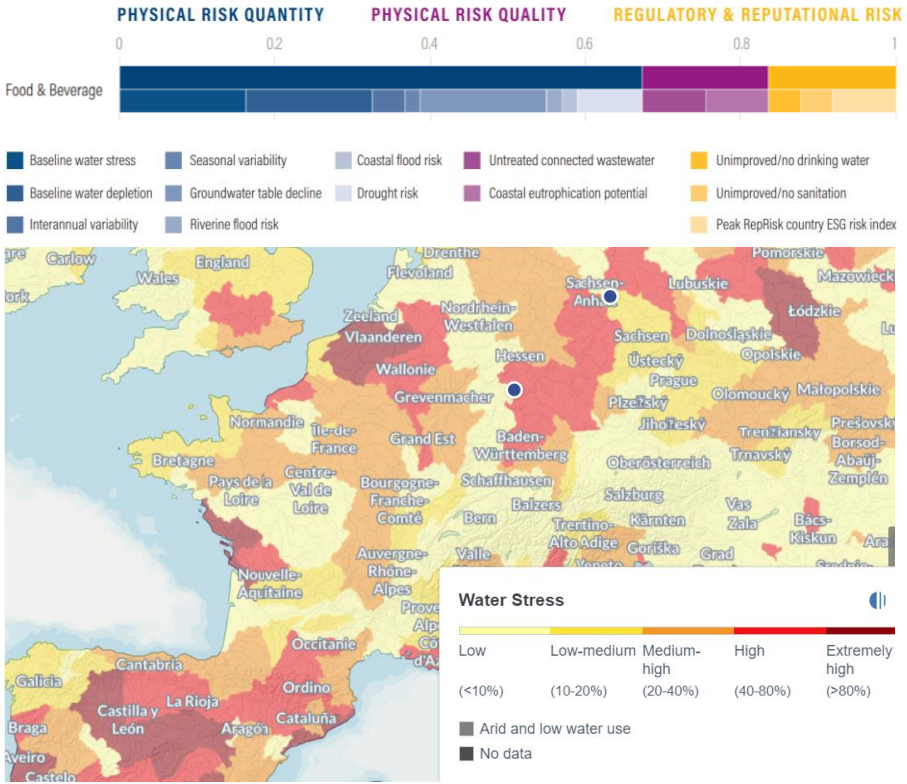


Image credit: WRI Aqueduct, accessed on 09.01.2024, Aqueduct | WRI.

Water Sustainability Targets

The **Water Withdrawal Risk** compares a facility's water use to the sustainable amount of water from its surrounding water sources.

If a facility's current water use is higher than the current and future sustainable water use amounts, the facility needs to decrease its water use to avoid impacts to its operations from water scarcity.

Water withdrawal targets are set to achieve a tolerable amount of water stress to a basin as defined by the World Resources Institute, considering the impacts of lack of water on ecosystems, human health, human consumption needs and economic and social water needs.

WRI Baseline Water Stress = MEDIUM-HIGH

Water Withdrawal Risk = MEDIUM – between 25% and 50% decrease needed from current annual water use, invest in smart water strategies.

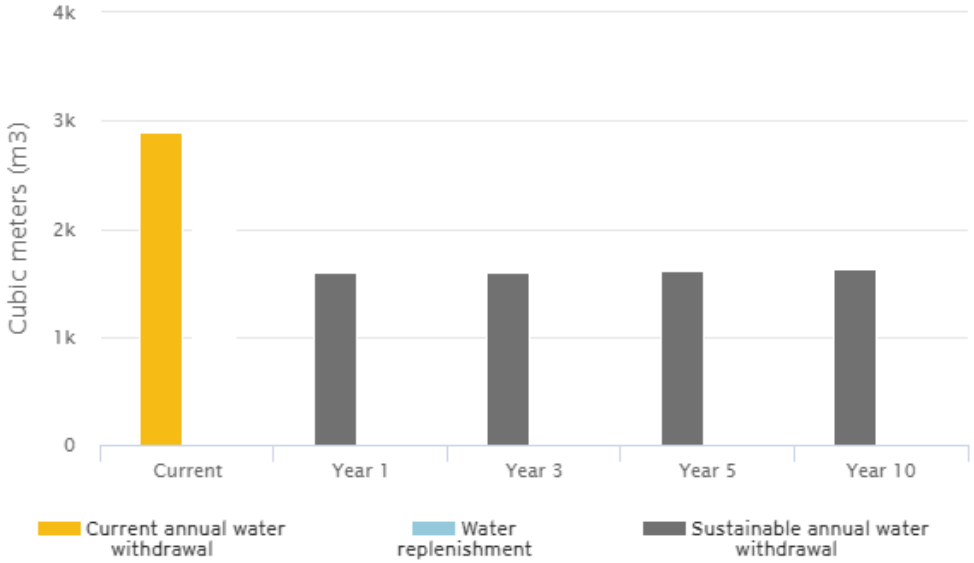


Image credit: Ecolab Smart Water Navigator, accessed on 15.09.2023, Smart Water Navigator | Ecolab.

Monetizing Water Risks

Taking business information on water use, water prices and production data to calculate the monetary value of water risks

Traditional Financial accounting based on the market price of water underestimates the business value at risk from water-related issues.

Environmental economics calculates water risk premiums that consider the non-market, intangible costs and/or benefits to business and society that water provides.

Giving you credible, actionable information to make more informed decisions to protect against water quantity and water quality constraints to business growth.

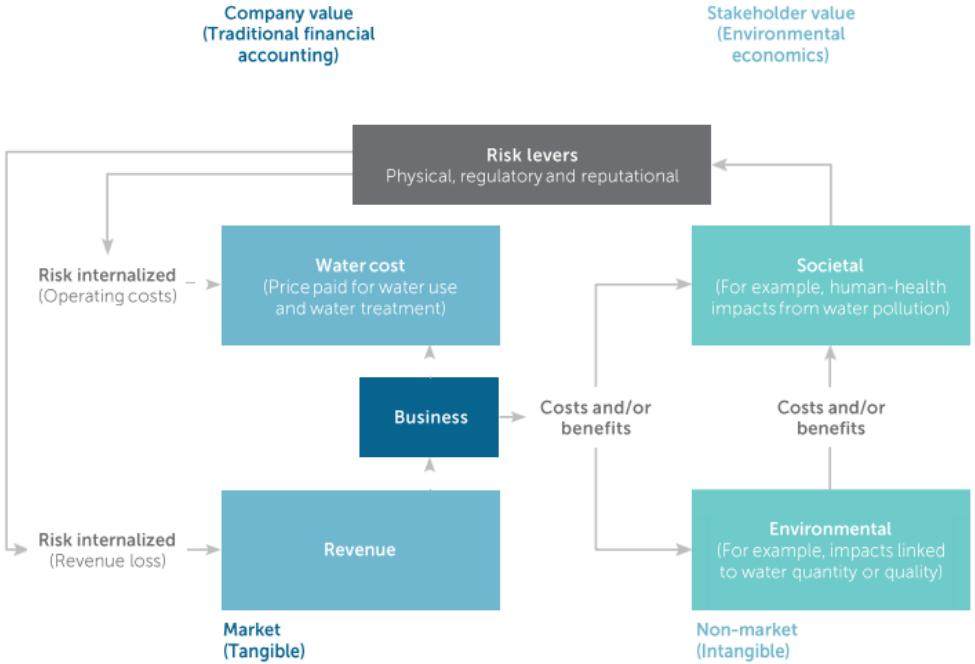


Image credit: Ecolab Smart Water Navigator. Water Risk Monetizer. March 2021

On site options

In this section we will discuss improvements in water usage we have identified with clients which can be implemented without putting hygiene standards at risk.

Adjustments to cleaning processes.

- When cleaning of a production line is required can the initial flush of the line which can use significant volumes of water be replaced by a physical system such as vacuum suction to remove the initial high concentration of contamination on the line?
- Vats and vessels cleaned with lances; developments in nozzle technology have enabled significant savings in water volume to be made during such processes. Further saving have been realised by switching from high pressure water to steam cleaning systems, which can reduce water usage by more than 80%

COD profile

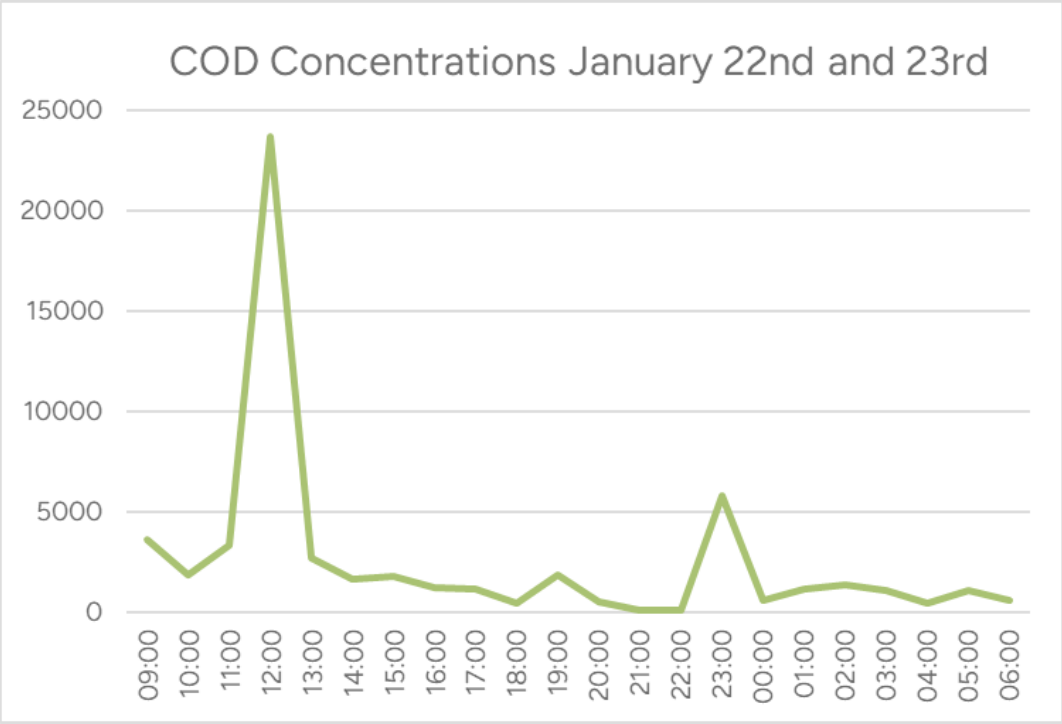
Chemical Oxygen Demand or COD is a significant function in the cost of trade effluent disposal to sewer.

The majority of sites are aware of the concentration of COD in the trade effluent they discharge to sewer.

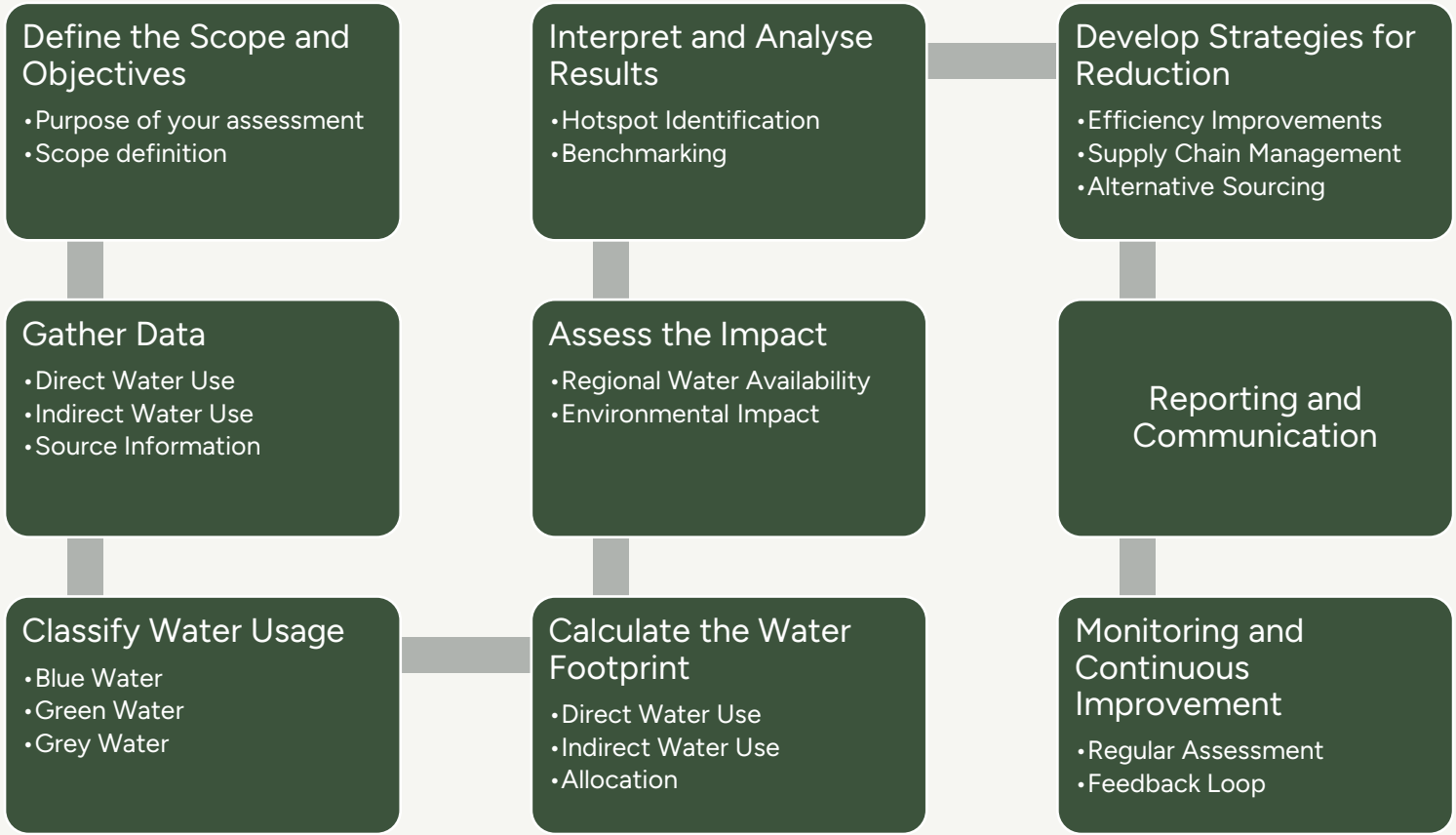
A lesser number are aware of the COD profile of their trade effluent discharge.

Establishing and potentially manipulating that profile can produce an increase in sustainability both in terms of water and energy usage on a site.

Soft Drink Manufacturing site- COD profile



Water Footprint Assessment



AquaPlan – Assessing and Mitigating Water Risks in Agricultural Supply Chains

- Tool developed by the University of Manchester that is a user-friendly interactive tool kit for the Aquacrop-OS Model
- Gives information of how much water different crops need in different locations, yield losses and irrigation requirements.
- Can be used to assess impacts of climate change
- Currently being undergoing a pilot study with British Sugar – webinar for the FDF will be held on 20th June 2024 - Register Here

Do you have any questions?

Making Sustainability Happen

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