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INTEGRATING LIFE CYCLE MANAGEMENT INTO DANONE'S WATER SUSTAINABILITY STRATEGY

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ABSTRACT

Water management is a high priority for companies worldwide but poses some difficulty regarding its integration into existing sustainability strategies.

Life Cycle Management concept is well adapted to water and is based on measurements, e.g. water footprint. Danone benchmarked water footprint methodologies and found that there is a growing consensus that a global water footprint should include both water resources consumption and pollution aspects. Methodologies addressing water resources consumption are found to be more robust than the ones addressing pollution aspects.

Based on this finding, Danone Waters' business unit is now deploying a water consumption indicator weighted by a regionalized water stress index and is pursuing research and development on methodologies addressing degradative water use.

INTRODUCTION

Corporate sustainability strategy has already integrated climate change and non-renewable energy (use) impacts related to companies' direct operations, and more recently is including impacts along the value chain. Danone reduced its carbon footprint by 35% between 2008 and 2012 (Danone 2012), not only of its direct operations but of packaging, transport, storage and end-of-life as well. This achievement first required the measurement of Danone's carbon footprint, followed by the development of a mitigation plan to manage it over time. The engagement of stakeholders was necessary when greenhouse gases emissions were not directly under the responsibility of Danone.

Recently, water issues have increased significantly (United Nations World Water Assessment Programme 2012) and will certainly follow the same type of management by companies within their sustainability strategy, along with climate change and non-renewable energy use. However, water remains a challenge to integrate into a sustainability strategy. Companies

usually measure and report direct water use, which is often a standard industrial key performance indicator. They also set water use mitigation targets and communicate these values extensively. But developing an integrated water sustainability strategy along an entire value chain, following Life Cycle Management principles is as a challenge for many reasons, among them the lack of standardization in water footprint assessment and the lack of external pressure from stakeholders, although the latter is rapidly evolving.

Danone Waters' business unit, has been integrating water resources management at the site level for many years in order to preserve its resources. Overall Danone has decreased its operational water use by 43% since 2000 and continues to make improvements (reduction of 3.1% in 2012 compared to 2011). But at a higher level, water sustainability strategy implies a more comprehensive approach including product footprints, supply chain management and Life Cycle Management. It requires going beyond simple figures of operational water use, including the entire value chain and accounting potential impacts by considering local specificities (regionalization).

This article describes the approach chosen by Danone to achieve integrated Life Cycle Management of its water footprint, within its corporate sustainability strategy.

METHODS

The links between Life Cycle Management and sustainability strategy are presented in Table 1. The life cycle stages are defined for each Danone product and sustainability pillars are derived from Epstein et al. 2008, although they are often broadly defined in every sustainability strategy. This matrix approach exposes the complexity of a sustainability strategy, particularly regarding water. Every strategy relies on a measure of the company's and products' footprint, presented in the first column of the Table 1.

	Governance/Sustainability strategy			
	Measure	Manage	Engage with stakeholders	Disclose
Raw materials/ Agriculture	**Upstream carbon and water footprint**	e.g. Sourcing strategy / Agriculture impact management	e.g. Suppliers, farmers and local communities	e.g. Achievement in sustainable sourcing
Industrial production	**Danone direct operations (Scope 1 carbon footprint and water use figures)**	e.g. Mitigation strategy in place. Energy and water efficiency plan.	e.g. Local communities, employees, NGOs	e.g. Achievement on industrial efficiency
Transport	**Downstream carbon and water footprint**	e.g. Marketing, product footprint, waste management and packaging	e.g. Consumers, local communities and countries	e.g. Product efficiency and Environment Product Declaration (EPD), labelling
Sales				
Consumption				
End of life				

Table 1. Link between sustainability strategy steps and Life Cycle Management

A sustainability strategy is first based on a measurement (e.g. water footprint) to be able to analyze, take sound decisions based on facts, prioritize mitigation actions, and communicate

and engage with stakeholders, among other actions. Danone Waters has recognized this as being a critical part of the company strategy. Usually companies tend to focus on direct operations or on sectors of direct interest and business objectives. This often discourages a life cycle perspective and can possibly lead to wasted resources on less important issues. As already stated, companies have a good understanding of their direct water use, but water use might be greater within the supply chain or even downstream during product use or end of life. For the food and beverage sector, agriculture plays an importantrole in terms of water footprint and should be addresed within the life cycle perspective.

Various water footprint measurement methodologies have been recently developed in the frame of life cycle assessment. Different methodologies suggest different results for the same system assessed which is an issue for many companies who want to be able to benchmark their progress, to measure environmental benefits, to get recognition for their efforts and to ensure their credibility. In this respect, the ISO 14'046 working group is a valuable initiative, however this standard will not be available before 2014. As actions must be taken now regarding water, Danone Waters cannot wait for a consensus to be found before measuring its footprint. Danone Waters has taken the lead on this water footprint measurement task by selecting the most relevant indicators and methodologies to measure its water use related impact (i.e. water footprint).

RESULTS AND DISCUSSION

Danone benchmarked water footprint methodologies in order to select the most suitable one to measure its corporate and product water footprints. There is a growing consensus that this water footprint should include both water resources consumption and pollution aspects. This benchmark showed that water consumption methodologies provide more robust indicators than water degradation methodologies. The latter is difficult to apprehend and provides a high variability in the results, leading to difficulties for decision making. A lack of data is also recognized as being an important issue for supply chain measurement and downstream operations, although this is currently being addressed by some initiatives such as the Water Footprint Network, Quantis Water Database and ecoinvent v3.

Based on this finding, Danone Waters is now deploying a water consumption indicator weighted by a regionalized water stress index, also known as a water scarcity footprint. This indicator is based on the methodology presented by Pfister et al. 2009 at the midpoint level. The focus is not only on volumes of water, but on the local context. A region prone to higher scarcity will have a higher impact than a region with a lower one. This measure is closer to an environmental impact than the standard volumetric indicators (e.g. key performance indicator) and will lead to better global water management and decision taking within Danone Waters.

Danone Waters pursues research and development on methodologies addressing degradative water use and is engaging with stakeholders to promote the awareness and potential solutions addressing it. It includes engaging with scientific communities at conferences, engaging at the national level in France in the ISO 14'046 water footprint standard project, and communicating the process and its outcomes to stakeholders, among others.

As an outcome of this process to integrate water within its sustainability strategy, Danone Waters is building a tool called "DROP" (Danone water Resource Optimisation Programme).

This tool will allow the measurement in 2013 of the Danone Water Division water footprint, and commit to a water footprint reduction by 2020. The tool will integrate the water scarcity footprint in its first version, and in a further versiona water degradation indicator will be included.

This tool will allow the yearly update of water footprint measurements and allow managers to establish scenarios to support decision making to decrease Danone Waters' water footprint. As described above, this initiative is an important step towards a water strategy at the corporate level. Indeed, this first phase of deployment within the Danone Waters division is supposed to build the experience and methodological consistency to pave the way for other Danone businesses as complex agricultural supply chain and impacts should be assessed with an accurate, robust and recognized methodology.

CONCLUSIONS

Decreased impact and pressure on water resources globally require companies to integrate water within their sustainability strategy and to account for a Life Cycle Management perspective. Danone Waters shows the path of how to achieve this, by starting with the measurement of its division water footprint. This is the first step towards better management, engagement with stakeholders and communication across the entire business of Danone.

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