EBOOK

SUSTAINABILITY CHALLENGES to come for the Food & Beverage industry

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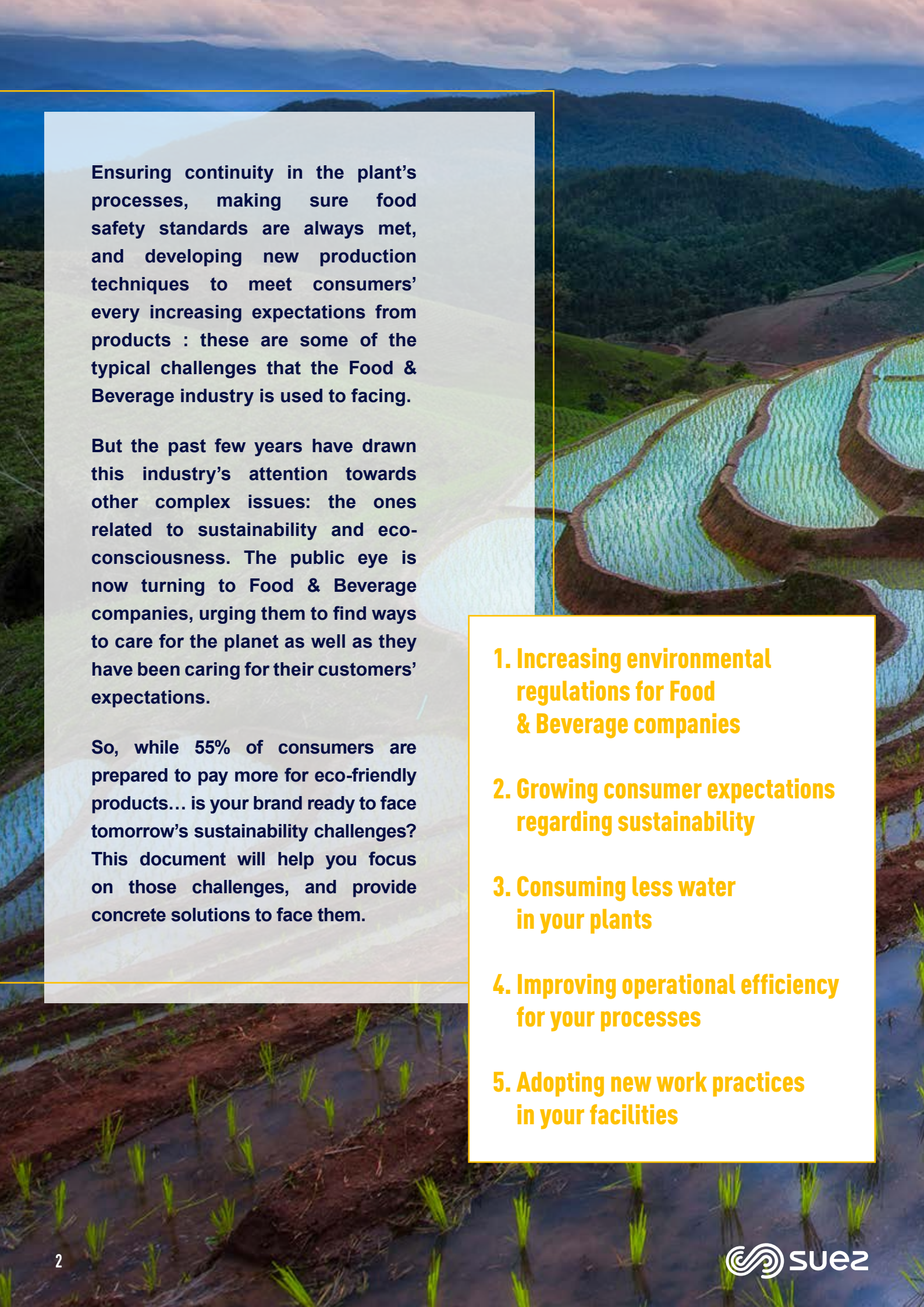

Ensuring continuity in the plant's processes, making sure food safety standards are always met, and developing new production techniques to meet consumers' every increasing expectations from products : these are some of the typical challenges that the Food & Beverage industry is used to facing.

But the past few years have drawn this industry's attention towards other complex issues: the ones related to sustainability and eco-consciousness. The public eye is now turning to Food & Beverage companies, urging them to find ways to care for the planet as well as they have been caring for their customers' expectations.

So, while 55% of consumers are prepared to pay more for eco-friendly products… is your brand ready to face tomorrow's sustainability challenges? This document will help you focus on those challenges, and provide concrete solutions to face them.

1. Increasing environmental regulations for Food & Beverage companies
2. Growing consumer expectations regarding sustainability
3. Consuming less water in your plants
4. Improving operational efficiency for your processes
5. Adopting new work practices in your facilities

1 | INCREASING ENVIRONMENTAL REGULATIONS FOR FOOD & BEVERAGE COMPANIES

CHALLENGE

THE RISE OF ENVIRONMENTAL LAWS

Food & Beverage manufacturers know that most countries in the world are **intensifying their laws and regulations** regarding the protection of the environment. As they push companies to focus more on their environmental impact, they add more and more constraints to the company's production and discharge processes.

To drive manufacturers to more eco-friendly industrial habits, taxes skyrocket more and more each year, making the compliance with those regulations an economic issue for Food & Beverage companies.

In the coming years, this **challenge will emphasize new regulations aiming** at…

- Drastically reducing CO_2 emissions
- Minimizing water consumption at the plants
- Enforcing more stringent wastewater discharge limits, and incentivizing nutrient recovery
- Limiting the use of virgin plastics for packaging
- Banning factory waste to landfills as a whole

SOLUTION

STAY A STEP AHEAD OF REGULATIONS

In this challenging rise of environmental laws, Food & Beverage companies need to monitor **technological innovations and developments** as much as possible. Their goal? Anticipate as many coming regulations as possible, so they not only keep up with them, but also stay a step ahead.

This also means finding the right providers and partners that keep updated on those environmental frameworks, and develop their products and services according to these regulations.

87%

of Food & Beverage manufacturers feel that complying with regulations have a positive impact on their company

(Food & Beverage Manufacturing Industry Study, Nextec)

A DAIRY MANUFACTURER AIMING AT ZERO WASTE TO LANDFILL

In 2019, one of the world's biggest dairy manufacturers decided to conduct an ambitious Global Industrial Waste Management strategy. Its goal? **Reaching zero waste landfill** in the coming years, starting with its 4 production plants in Morocco, and several logistics platforms in the country.

This solution was found by **reducing the volumes of the different waste streams**, designing correct collection and sorting processes, and the complete traceability of the recycled waste streams. All of this resulted in the full valorization of the collected waste and a zero waste to landfill solution for the factories. This solution also enables this Food & Beverage brand to anticipate the coming regulations concerning landfill waste.

2 | GROWING CONSUMER EXPECTATIONS REGARDING SUSTAINABILITY

CHALLENGE

YOUR BRAND IMAGE AT STAKE

Citizens are increasingly aware of the environmental impacts of climate change, plastic pollution of the oceans and the depletion of water resources. In the age of social media, information travels quickly. Consumers can now react in real time when they discover that a company does not comply with the environmental regulations in force, but also relay good practices.

Relying on sustainable production methods has become a major image issue for Food & Beverage companies on which their growth potential depends in part. And the level of demand in this area is growing. They are expected **to redouble their efforts to identify and adopt production methods that protect the environment** and to communicate **transparently on their commitments by avoiding the pitfalls of greenwashing.**

SOLUTION

USE RECYCLED MATERIALS AND COMMUNICATE

To meet this challenge, Food & Beverage manufacturers have to **prove they are taking action to protect the planet**. The task is so wrapped up in so many issues (water scarcity, climate change, plastic pollution…), that it can seem overwhelming

That's why some manufacturers begin by implementing change to one of the most visible areas for consumers – their packaging. By **focusing on packaging, two effective solutions emerge** for Food & Beverage manufacturer around the world:

- **Including more recycled materials in their packaging.** Plastics are perceived as one of the worst polluting elements from a consumers' point of view. This material then becomes one of the most effective ways to build an eco-friendly brand image.
- **Communicating their environmental efforts the right way.** In 2018, a ProCarton study showed that only 9% of Europeans perceived plastic packaging as environmentally-friendly. This means, whatever sustainable efforts brands make, they need to communicate about it in a smart way: by including specific logos and certifications on their packaging, or by launching CSR campaigns for instance.

Products that promote sustainability make

5%

more sales a year than those that don't

(SUEZ study)

A COFFEE PLANT TAKING ADVANTAGE OF WASTE RECOVERY

For the French & Moroccan market, a leader in the portioned coffee market wanted to extend the recycling & **improve the end-of-life of its capsules.** With the support of a waste recovery expert, the company implemented the following solution : all collected capsules are taken to a processing centre, where the **aluminum and the coffee grounds are separated**. The coffee grounds are transformed into **compost and fertilizers** which are then used to **improve soil quality**. The aluminum is recycled into the economy via recovery streams. This way, **the coffee grounds and the aluminum that make up the coffee capsules are recycled and reintroduced into France & Morocco's local economies.**

3 | MINIMIZING WATER CONSUMPTION IN YOUR PLANTS

CHALLENGE

WATER BECOMES A SCARCER RESOURCE

The Food & Beverage industry is one of the largest water-consumers of all. With increasing water scarcity and a growing population on the planet, it faces **challenges regarding its water use and its impact on the global water footprint.**

Still manufacturers need to create great quality ingredient water, as well as use utility water for their boilers and coolers, to end up with **products that meet consumers' expectations** and food safety regulations.

As a result, the first thing manufacturers need to do is map their water flows, to find new **innovative ways to reduce their water footprint downstream of their processes.**

SOLUTION

INNOVATE TO REDUCE YOUR WATER FOOTPRINT

Water supply **techniques keep evolving**, to help plants find new ingredient water and utility water supply sources. For instance, manufacturers can consider…

- **Desalinating seawater** thanks to reverse osmosis and remineralisation technologies
- **Regenerating existing boreholes that malfunction** because of mechanical, chemical or biological blockages, thanks to specific treatments

Food & Beverage manufacturers also need to **manage their plant's water use in a more effective way**, to preserve this scarce resource relied upon by most of their production processes. To do so, many will aim at…

- **Protecting water resources,** with solid risk assessment and alternative supply sources to avoid stopping the production process
- **Increasing water reuse inside and outside the plant,** by applying the right treatments to wastewater to recycle it

More than

25000

liters of water are required to grow and produce a day's supply of food for a family of four

(thewaterweeat.com)

SAVING WATER ON A BEER PLANT IN PORTUGAL

Beer is made at 95% of water, and so much more of this scarce resource is used in the brewing process. Conscious of this environmental challenge, a worldwide beer brand started **looking for alternative water sources for its portuguese plant**.

With the support of a water treatment expert, the brewery managed to significantly reduce its water consumption, through improvements implemented for better performance and safety, with the help of **membranes and chemical water treatment technologies**. The **wastewater was reused in the cooling towers**, measures that allowed not only to reduce the annual discharge of wastewater by 72 million liters, but also to reduce water consumption in equal quantities. **In terms of tertiary water treatment, the brewery also managed to improve its production performance by 40%..**

4 IMPROVING EFFICIENCY NEEDED IN YOUR PROCESSES

CHALLENGE

MEET THE GROWING DEMAND OF THE MARKET

It's a fact: each year, more and more new Food & Beverage companies come to market. With globalization on the rise, competition increasing, and operating margins growing slimmer, Food & Beverage companies are under constant pressures. Added to those pressures, consumers expect Food & Beverage companies to supply flawless, always available products to the market. Consumers are increasingly volatile, and, if their favorite product isn't available, they'll turn to another brand easily.

As a consequence, companies in this industry need to aim at **operational efficiency, to meet the growing demand of the market and consumers**. Optimizing the plant's performance is crucial to meet this challenge. This means speeding up their productivity, reducing their risks, and finding new ways to defend their margins, while still **complying with the strictest food safety standards**.

SOLUTION

CREATE PERFORMANCE FROM INDUSTRIAL WASTE

Performance and operational efficiency at the plant can be optimized in various ways. One of the most effective strategies is to find **innovative ways to create value from waste streams**.

Depending on the materials produced and discharged on the plant, different techniques exist to encourage resource recovery, such as…

- **Biological recovery**, which helps return organics to soil: land spreading, composting, protein recovery…
- **Energy recovery**, such as on and off-site anaerobic digestion that produces gas to fuel your plant, or conversion of oil into fuel
- **Treatments for recovery**, which facilitate creating value from wastewater thanks to preliminary treatment of sludges and other organic by-products

68%

of Food & Beverage manufacturers say that reducing their costs is their most important measurement to achieve OpEx targets, and 38% quote maximizing productivity as one of their top challenges

(Achieving Operational Excellence in Food and Beverage, Aberdeen Group)

A MEAT UTILITY FOCUSING ON OPERATIONAL EFFICIENCY

A UK based world leading meat producer, struggling to meet the BREF & UK regulations, was also looking for a solution to create value from its **solid food waste and wastewater. Partnering with a Wastewater Treatment Expert, it was decided to invest in a solution based on the anaerobic technology, to produce biogas. This treatment was followed by an advanced membrane treatment solution, which enabled the factory to produce clean water for reuse within the factory. The factory was able to generate water savings** (USD 650k/year), reduce wastewater discharge costs (USD 700k/year), generate biogas (USD 250k/year), reduce sludge disposal costs (USD 50k/year) and overall to **significantly improve their carbon & water footprint**.

5 | ADOPTING NEW WORK PRACTICES IN YOUR FACILITIES

CHALLENGE

A COMPLEX WORLD OF DATA AND IOT

The Covid-19 pandemic showed it quite clearly in the beginning of 2020: **on-site operations no longer work systematically, and need to be reimagined**. The whole Food & Beverage supply chain needs to be managed precisely, sometimes off-site and at a distance.

Moreover, **digital solutions surfing on the Internet of Things trend emerge, to help industrial actors monitor their production lines, energy consumption and assets**. But the issue lies in the fact that factory employees don't always have proper training and digital awareness, which are needed for those tools to be adopted and really taken advantage of.

SOLUTION

TAKE ADVANTAGE OF DIGITAL INNOVATIONS

Nowadays, Food & Beverage manufacturers have access to digital solutions that can help them take up this challenge. **Remote monitoring** is made easy, and helps avoid direct contact between the employees in case sanitary issues occur.

With those technologies, plant managers also get real-time information about the Food & Beverage factory at a distance, helping them to:

- Improve the life of critical plant assets
- Reduce operating costs
- Prevent unplanned downtime
- Demonstrate higher operational transparency

DISCOVER MORE IN VIDEO

Food & Beverage manufacturers also need to keep an eye on the emerging technologies. In the coming years, digital innovations such as Big Data or the blockchain are expected to help them go further, by predicting asset malfunctions and ensuring food safety even more.

79%

of Food & Beverage manufacturers say that Internet of Things will have a positive impact on their company

(Food & Beverage Manufacturing Industry Study, Nextec)

MONITORING REMOTELY A PLANT IN INDIA WITH DIGITAL TECHNOLOGIES

Since 2009, a dairy plant located in India and belonging to a world Food & Beverage leader installed a **wastewater tertiary treatment unit based on the most advanced ultrafiltration (UF) and reverse osmosis (RO) technologies** to treat its industrial wastewater. After a few years from its installation, the new unit faced multiple unplanned cleanings, and operational shutdowns threatening its productivity.

To face this challenge, the plant decided to connect the wastewater treatment unit to the **SUEZ InSight© Asset Performance Management platform**, for remote data trending. Sensors were installed, to ensure that RO permeate flow normalization calculations and other key UF fouling calculations were analyzed. This digital system now provides the personnel on the facility with diagnoses and decision support systems, helping them optimize the process according to instantaneous performance instances.

As a result and since the Suez Insight installation, the chemical treatment cost of the wastewater unit has been reduced by 41,3%. The remote solution also reduced the need for permanent site personnel and further improved the overall operational costs of the system.

During the Covid-19 pandemic, the remote **InSight digital solution helped the plant balance between the reduction of site presence required with the remote process consulting, and continuing to remotely monitor the health of assets and plants**.

More stringent regulations, more brand competitiveness, more efficiency needed are some of the most challenging realities Food & Beverage manufacturers face today. While some of them are already on companies' minds on a daily basis, others need to be anticipated, as those challenges are expected to intensify in the coming years.

Perhaps the most challenging to Food & Beverage manufacturers is that the solutions available provide processes and technologies that are unique to local regulations and actors. This further complicates management of brands that develop sustainable strategies at a global level.

Your biggest asset for your future – find technology partners who help you develop your global sustainability strategy, as well as deploy solutions locally, to shift from a linear to a circular use of resources.

SUEZ is a global leader in essential environmental services present on 5 continents with more than 450.000 customers worldwide. Through the reliable and safe total management of water, and waste, our integrated and collaborative approach offers wide possibilities to meet resources & asset preservation challenges you face.

Combined with our unique and differentiating offering covering a broad portfolio of advanced technologies, innovative solutions, and digital services, our dedication is to improving your performance, competitiveness while ensuring the highest level of compliance with regulations in force in each country. Supported by decades of experience with large industrial clients, SUEZ brings added value to Food & Beverage industry delivering sustainable water treatment and waste treatment including packaging recycling solutions.

Our solutions cover the whole value chain from the utilities, process water to waste management in many sectors such as dairy, brewery, soft drinks, distilleries, meat & poultry, grain milling, sugar, processed and prepared food.

We can also support you with consulting services regarding resources management & climate change adaptation, construction, site management or environmental studies & permitting. And help you on packaging management, from eco-conception, recyclability certification, recycling solutions, as well as recycled material supply.

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