

 **pantarein**



White paper

WATER UNDER PRESSURE: FROM RISK TO STRATEGY

A smart plan for future-proof water management

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Introduction: **why water is becoming a strategic parameter**

For a long time, water was regarded as an operational, local matter: a cost item (in terms of abstraction and treatment), a permit condition, a technical file for the environmental department. Driven by climate change and stricter regulation, it is rapidly evolving into a structural business risk. Today, water availability touches on business continuity, permits, investments and reputation.

Our region is among the most water-scarce in Europe. According to the World Resources Institute's Aqueduct Water Risk Atlas, Flanders' demand for water already structurally exceeds supply. Flanders has a negative water balance – and the pressure on groundwater keeps increasing year after year. Intensive agriculture and industry, the high degree of soil sealing and climate change reinforce one another: heavier downpours overload rivers and sewers, while longer periods of drought deplete water reserves. The dry summers of 2017, 2018, 2022 and 2025 were not exceptions, but signals of a structural shift.

For businesses that depend on water – in sectors such as food, chemicals, pharmaceuticals, textiles and paper – this development translates into concrete strategic risks: water scarcity, restrictions on water abstraction and rising costs for water abstraction and treatment. Moreover, those who look only at water consumption at their own site see just part of the picture. Water risk often lies upstream as well, with suppliers in regions of high water stress.

Three evolutions

The shift from an operational matter to a strategic risk is the result of three evolutions:

1. Climate change

Water is becoming an ever less predictable resource, with more extreme periods of drought and flooding that put production continuity, the availability of raw materials and infrastructure under pressure.

2. Stricter regulation

On 22 December 2027, the deadline of the European Water Framework Directive expires, with potentially far-reaching consequences for businesses. Permits for water abstraction and discharge are being assessed more critically, and reporting frameworks such as the Corporate Sustainability Reporting Directive (CSRD) and the European Sustainability Reporting Standards (ESRS E3) are turning water data into a mandatory and auditable part of business operations.

3. Higher market expectations

Customers and investors increasingly demand transparency about water dependency and water risks across the entire value chain.

Together, these developments point in one direction: those who structurally embed water risk in their strategy and decision-making are building a future-proof organisation.

In this whitepaper we offer a strategic framework for approaching water as a business parameter. We begin with the external forces reshaping the water playing field. We then show how to translate a risk analysis into water policy and concrete actions on site. We close with a priority matrix that helps organisations determine where they stand today and which next steps are advisable.



How external pressure is reshaping the water playing field

The context in which businesses make decisions about water today is shaped by external pressure. That pressure is mounting from several directions at once: regulation, reporting obligations, market expectations and climate change reinforce one another. The result is a playing field on which water performance is no longer optional.



Stricter discharge standards and permit conditions

Since the European Court of Justice's Weser ruling (2015), the prohibition on the deterioration of water quality is no longer an aspiration but a legally binding obligation for the authorities that issue permits. Since 2021, the Flanders Environment Agency (VMM) has assessed every permit and environmental impact assessment (EIA) application for industrial wastewater against that prohibition via the Weser step-by-step plan, a framework that was further tightened in June 2025. For businesses, this translates into a stricter and legally more robust assessment of every discharge with a significant impact. That may lead to additional treatment requirements.

On top of that come new European standards. With the revised European Urban Wastewater Treatment Directive (UWWTD), which member states must transpose into national law by 31 July 2027, the European Union is significantly tightening the standards for treating urban wastewater. Treatment plants face stricter limits for nitrogen, phosphorus, pharmaceutical residues and microplastics. For larger plants (more than 100,000 population equivalents), a quaternary treatment stage becomes mandatory, financed through extended producer responsibility for the pharmaceutical and cosmetics sector.

For businesses that discharge indirectly via the sewer system, this means stricter discharge conditions and a greater risk of delay in permit procedures. Businesses that discharge directly into surface water do not fall under the UWWTD, but under the European Water Framework Directive – and therefore under the Weser test.

In Flanders, a discharge permit has long ceased to be a formality; it is a precondition for business continuity and growth.



02 **Physical risk = financial risk**

For water-dependent businesses, water shortages pose a major physical risk. During prolonged drought or restrictions on water abstraction, they can no longer produce at full capacity. In sectors such as food, chemicals and paper, this threatens business continuity. In addition, low water levels in rivers can hamper shipping, temporarily cutting off supply and transport routes.

Heavy rainfall, waterlogging and flooding pose another risk. Flooded sites, damaged installations and interrupted supply lines lead to production downtime, repair costs and logistical delays. In vulnerable areas, these risks also put property values under pressure and prompt insurers to tighten their terms.

Investors and financial institutions, too, are integrating water risk ever more explicitly into their decision-making. Banks and asset managers ask for well-founded climate risk scenarios in which water takes its full place alongside transition risks such as carbon pricing. Credit rating agencies factor physical water risks into their analyses of sectors such as food, chemicals and agriculture. This can affect a company's creditworthiness. Those with no answer to it risk more difficult or more expensive access to capital.

Physical water risk is becoming a financial parameter that weighs on investments, insurability and access to capital.

03

Reporting and assurance: CSRD and ESRS E3

For water as well, sustainability reporting is evolving from voluntary communication into a structured and auditable process. This applies in particular to companies subject to the CSRD; since the Omnibus simplification (2026), these are companies with, on average, more than 1,000 employees and more than €450 million in net turnover, from financial year 2027 onwards. Non-EU groups with sufficient turnover and a large EU establishment may also come within scope.

Under ESRS E3, the water standard within the CSRD, water abstraction and discharge are mandatory reporting indicators. Companies must also report at the level of the river basin in which they operate. Whether a company falls under ESRS E3 depends on the double materiality assessment: if water is material to your own activities or those of your suppliers, reporting on it is a must.

In doing so, many organisations struggle with data quality, just as they do with carbon data. Water consumption and discharge are often spread across different sites and business units, measurement methods vary, and internal systems are sometimes lacking to substantiate figures in a consistent way.

Water data are becoming a decision-making instrument, subject to the same demands for quality, transparency and substantiation as financial data.

04

Supply-chain pressure through customers and tenders

Large customers increasingly integrate water risk into their supplier selection and due diligence processes, by analogy with the way they look at scope 3 emissions today.

A raw-material supplier in a water-scarce region, a packaging producer with a discharge problem or an ingredient supplier that has to scale back production during drought – every link in the value chain can affect business continuity.

As a result, smaller and mid-sized players increasingly face questions about water-related data, while the internal systems to collect those data and report on them are often still lacking.

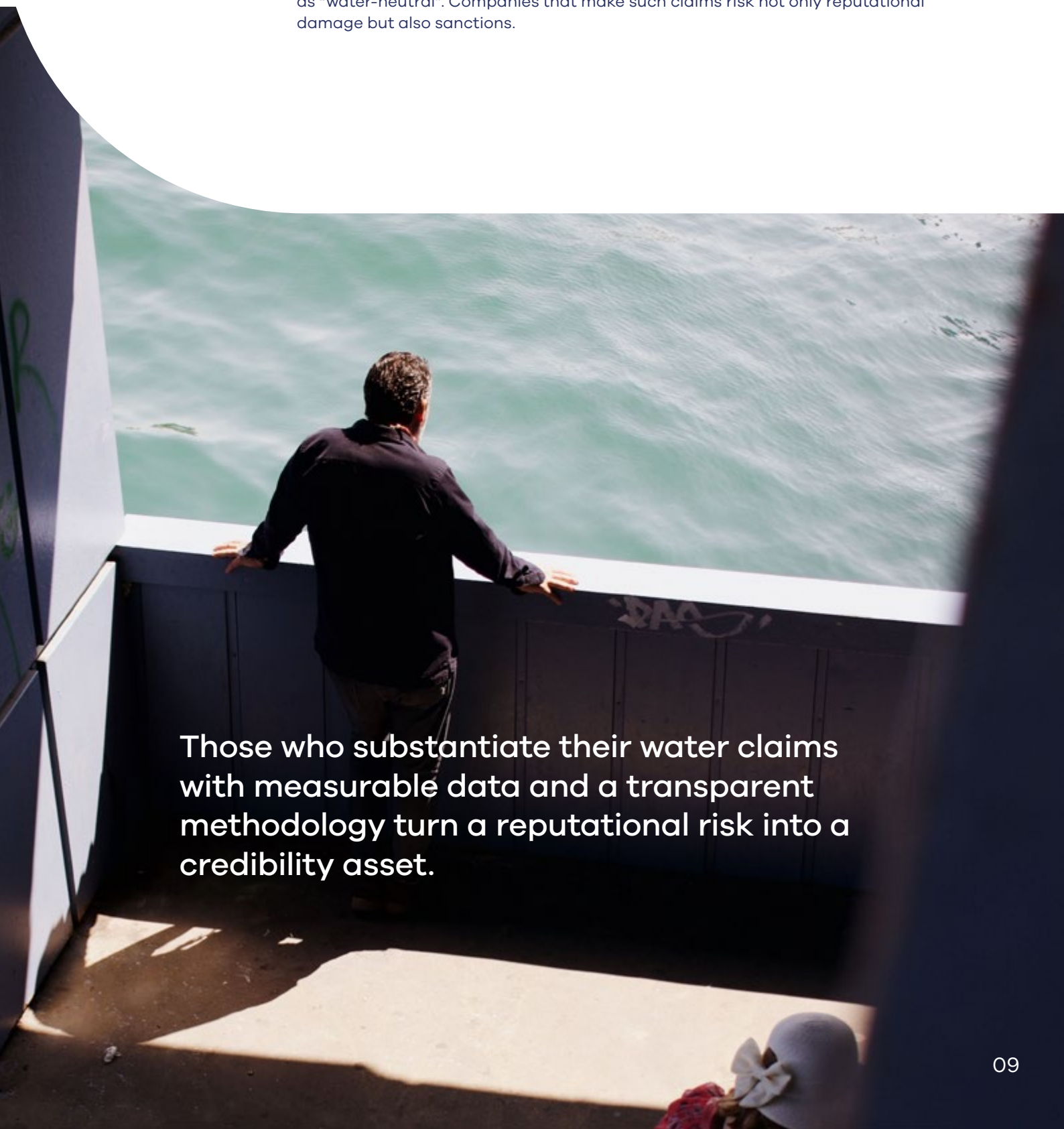
For the very largest companies, due diligence is moreover being anchored in law through the Corporate Sustainability Due Diligence Directive (CSDDD), although the scope of that directive has been limited by recent European simplification to companies with more than 5,000 employees and €1.5 billion in turnover.

In practice, supply-chain pressure often takes a more concrete form – through CDP Water Security questionnaires that customers send to their suppliers, or through an Alliance for Water Stewardship (AWS) certification as a condition in tenders.

05 **Credible communication**

Scrutiny of sustainability claims relating to water is increasing. Regulators, customers and NGOs no longer accept terms such as “water-neutral” or “circular water use” without substantiated measurements and a transparent methodology. Where these are lacking, you run a real reputational risk.

On 27 September 2026, this pressure will also acquire a legal dimension. From that date, the European Directive on Empowering Consumers for the Green Transition (EmpCo) prohibits generic, unsubstantiated environmental claims – a ban that applies to terms such as “climate-neutral”, but equally to claims such as “water-neutral”. Companies that make such claims risk not only reputational damage but also sanctions.



Those who substantiate their water claims with measurable data and a transparent methodology turn a reputational risk into a credibility asset.



From water risk to water strategy

External pressure creates urgency, but urgency alone does not yet produce a future-proof water policy. How do you translate water risk into strategic choices, and how do you then embed them in your business operations?

1 Impact and risk analysis

A robust water policy begins with insight into your impact on the one hand and your dependencies and risks on the other – the two perspectives of double materiality. A company may, for example, have an impact by abstracting large volumes of water from a vulnerable water body. The quality of the wastewater discharged and its effect on the local river basin and surrounding nature also play a role.

By mapping its impact, it becomes clear where a company can make a difference itself. At the same time, it strengthens its social licence to operate and its position in permit applications.

In addition, there are physical risks, such as drought and flooding. On the basis of scientific climate models and data sources such as the Aqueduct Water Risk Atlas, you can assess their likelihood and severity and determine which risks are material. This analysis is not limited to your own site but also focuses on the entire value chain. Flooding in Southeast Asia, for instance, can have a major impact on European businesses by delaying raw-material supplies.

The analysis also takes transition risks into account. Think of stricter discharge and permit standards, higher levies on water abstraction and use, more extensive reporting obligations and changing expectations from customers and investors. Those who identify these developments in good time can respond proactively and turn them into a competitive advantage.

An analysis carried out by Pantarein for confectionery manufacturer Astra Sweets, for example, showed that the company itself had a limited impact on the regional water supply but was heavily dependent on the availability of clean water. That distinction proved decisive in setting the right strategic priorities.

Find out more

[Getting a grip on water risks: Astra Sweets strengthens its water strategy](#)



2 Strategy and policy

A **water strategy** determines how an organisation deals with water over the long term and embeds that approach in its business operations. This strategy starts from the insights of the risk analysis and translates them into coherent strategic choices, such as:

- the level of ambition (for example, reducing groundwater abstraction by 20% by 2030);
- the approach across the value chain (for example, diversifying raw materials from water-scarce regions or supporting critical suppliers in reducing their water consumption);
- a balance between consuming less and discharging cleaner water;
- investing in water reuse and treatment yourself or outsourcing those activities;
- capital allocation (what place does water have in investment decisions?).

A **water policy** translates these strategic choices into a framework for action with clear priorities, such as efficient water use, prevention of water pollution, sustainable water management and climate adaptation. Objectives, policy lines, responsibilities and KPIs are attached to each priority. In this way, the water policy becomes a practical instrument for steering and monitoring.

Examples of objectives:

- a reduction in water intensity;
- effluent values for nitrogen, phosphorus and chemical oxygen demand (COD) that remain structurally below the permit standard;
- a larger share of recovered and reused water relative to groundwater abstraction;
- sufficient buffer capacity to keep production running autonomously when water abstraction is restricted.





3 Governance

A water policy that stands apart from regular decision-making remains a paper exercise. Effective governance brings together those responsible for sustainability, operations and finance with senior management, and integrates water risks into investment decisions, risk management and reporting.

This calls for clear anchoring at various levels. At executive level, water is given a permanent place on the agenda, while a process owner coordinates the water policy and aligns the efforts of different departments.

It's equally important that water becomes part of existing processes. Those who include water risks in investment cases, the risk register and periodic management and board reporting need not set up separate processes. Clear KPIs, a fixed reporting cadence and clearly defined responsibilities make progress visible and open to discussion, and ensure that the topic stays on the agenda between reporting moments as well.

By embedding water policy in investment decisions, organisations turn it into an engine for value creation and long-term resilience.

Frameworks for water strategy

From risk analysis to reporting – these international frameworks help build a robust water strategy:

Function	Framework(s)
Mapping water risks	Aqueduct Water Risk Atlas Water footprint calculations in accordance with ISO 14046 or the Water Footprint Network methodology
Setting objectives	Science Based Targets for Nature (SBTN)
Implementing and certifying	Alliance for Water Stewardship (AWS) Standard
Reporting	CSRD/ESRS E3, CDP Water Security, GRI 303 (Water and Effluents), Taskforce on Nature-related Financial Disclosures (TNFD)

Find out more

[From Aqueduct to SBTN, AWS and CDP: which frameworks should you choose for your water strategy?](#)



From policy to action

Water policy only takes on meaning when concrete measures follow from it. These take place at two levels: your own site and your value chain.

At your own site

1. Carry out a water audit

An efficient water policy starts from a systems approach in which technologies and measures complement one another. Which combination is most suitable depends on factors such as the volume and composition of the wastewater, the characteristics of the production process and the applicable regulatory framework. A thorough audit of water flows and processes maps out these factors.

2. Build a water treatment plant or optimise your existing installation

For companies without their own water treatment plant – or where the existing installation has reached its limits – a new water treatment plant can be a strategic investment. It is tailor-made on the basis of the flow rate and composition of the wastewater, the applicable discharge standards and the objectives for water reuse. A well-considered design makes it possible to meet stricter effluent standards, redeploy treated water in the production process and thereby reduce dependence on groundwater and mains water. Modular installations also allow capacity to grow step by step along with the company and, where possible, energy or biogas to be recovered.

For companies that already have their own water treatment plant, an optimisation study with relatively limited interventions can already make a big difference. Mobile pilot installations make it possible to test technologies before they are rolled out.

3. Increase efficiency through monitoring

Thanks to real-time monitoring of water use and wastewater flows, companies gain continuous insight into their performance. Anomalies, such as a sudden peak in flow rate or an increased pollution load, become immediately visible. This allows teams to make adjustments before small deviations grow into operational problems.

This is particularly valuable for water treatment, where the volume and composition of the wastewater vary constantly and stable operation is essential. By combining measurement data, clear KPIs and systematic follow-up, installations continue to perform optimally, while downtime, repair costs and permit problems are limited. In this way, monitoring grows from a control instrument into a steering instrument for efficiency and reliability.

4. Approach your water system as a single whole

The greatest efficiency gains arise when production and water management are managed in an integrated way. An abnormal pH or an exceptionally high flow rate in the wastewater often points to a problem in the production process, such as product loss or an open tap. Conversely, water treatment can be aligned with the production rhythm. This reduces the consumption of chemicals and energy and makes it possible – where relevant – to align biogas production more closely with demand.

5. Bring in a specialised partner

Not every company has the expertise to manage a water installation optimally over many years. Outsourcing arrangements, from operating contracts to integrated formulas such as DBFMO (Design, Build, Finance, Maintain, Operate), make it possible to bring design, financing, management and maintenance together with a single partner. This allows the company to focus on its core business, while water performance is guaranteed contractually.



In the value chain

A large part of water risk lies outside your own organisation, with suppliers in regions of high water stress. That is why measures in the value chain complement the efforts at your own site.

This calls for a structural approach: systematically screening suppliers for water risk, aligning water data and reduction targets with critical suppliers, and working together with them to find alternative water sources or more efficient processes. For raw materials from high-risk areas, supplier diversification or relocation can also reduce exposure.

Screening alone is not enough. Open dialogue and close cooperation with critical suppliers are at least as important in structurally reducing water risks and strengthening the resilience of the entire chain.





Partners in the field

More and more companies are setting up partnerships with farmers. A few inspiring examples:

- Vegetable processor **Verduyn** and brickmaker **Wienerberger**, together with five farmers, set up **Speyebekken**, a cooperative that stores quarry water in an 80,000-cubic-metre basin in Kortemark. This allows Verduyn to make substantial savings on mains water, while Wienerberger and the farmers are assured of a water supply, even in times of drought.
- The farmers' organisation **Boerenbond** and **AquaFlanders**, the federation of Flemish water companies, organise training for farmers in the abstraction areas of De Watergroep and Pidpa to protect drinking-water sources.
- The agri-industrial company **Cargill** and the non-profit organisation **Soil Health** Institute formed a three-year partnership that gives farmers in the agricultural supply chain tools to work on drought resistance, healthier soils and more efficient water use.
- The food company **Danone** works in partnership with farmers on regenerative agriculture. Sustainable water management, such as efficient irrigation and the prevention of pollution, is a central pillar of the programme.
- The food company **Mars, Incorporated** guides farmers towards climate-smart agriculture that reduces both water consumption and emissions.



How to determine your strategic position: **the priority matrix**

Not every organisation faces the same water challenges. The right priorities depend on two factors: the internal maturity of the organisation and the external pressure from regulation, the value chain and climate change. By combining these two axes, the priority matrix emerges: a decision-making framework with which Pantarein helps give direction to strategic choices around water.

The horizontal axis:
Internal maturity

The internal maturity of an organisation is determined by, among other things:

- the quality and completeness of water data at your own site and across the entire value chain;
- insight into water dependencies and risks;
- the anchoring of water policy in the business strategy;
- the presence of clear governance and responsibilities;
- the integration of water investments into regular capital allocation;
- the application of water reuse;
- the infrastructure to capture, buffer and store (rain)water;
- the presence (and performance) of a water treatment plant;
- alignment with suppliers, customers and permitting authorities.

The vertical axis:
External pressure

External pressure is determined by factors such as:

- permit and discharge requirements;
- reporting and assurance requirements (CSRD and ESRS E3);
- customer questions about water risk in the value chain;
- physical climate effects: drought, flooding and restrictions on water abstraction;
- rising costs for water abstraction and treatment.

An organisation's position relative to both axes determines where its strategic priorities lie.



External pressure

Reactive zone

Low maturity, high external pressure

Organisations in this quadrant give priority to structuring their water data and, given the high discharge and permit pressure, invest in an in-house water treatment plant and water reuse.

Close involvement of senior management helps prevent ad hoc decisions and reputational damage.

Strategic differentiation

High maturity, high external pressure

Organisations in this quadrant deploy water as a source of value creation. They stand out in tenders, optimise operational costs and remain agile in a landscape that is constantly changing due to climate change and regulation.

Internal maturity

Preparation phase

Low maturity, low external pressure

Organisations in this quadrant build a solid foundation: better water data, an initial risk analysis and clear governance.

This makes it clear in good time which investments (such as water reuse or an in-house treatment plant) are needed and by when, well before a crisis situation arises.

Proactive position

High maturity, low external pressure

Organisations in this quadrant can further build on their lead before pressure increases, by integrating water more deeply into investment decisions, scaling up water reuse and monitoring, and thereby distinguishing themselves towards customers and other stakeholders.

The priority matrix makes visible where a company stands with its water policy and which strategic choices strengthen its resilience and competitive position.

How Pantarein supports businesses

A well-considered water strategy calls for both strategic insight and technical expertise. That is why Pantarein Publishing joins forces with its sister company Pantarein Water, which develops circular water solutions for industry. Thanks to this cross-pollination, we support businesses that want to tackle their water challenge from A to Z.

We begin every project with a structured **strategic water intake**. In it, we analyse:

- the maturity of the organisation in terms of data, governance, policy and infrastructure;
- the external pressure from regulation, the value chain and climate change;
- the strategic and technical priorities, such as monitoring, water reuse and the feasibility of an in-house water treatment plant;
- the actions that will have the greatest impact over the next 12 to 24 months.

From strategy to technology, from risk analysis to the actual installation: together, Pantarein and Pantarein Water offer a single point of contact for everything to do with water.

Ready for a strategic water intake?

Email us at mail@pantarein.be or get in touch directly with:



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We create future
businesses

Water at your
service