

Water Stewardship **REPORT** **2024**

Philip Morris Italy

**Philip Morris
Manufacturing &
Technology Bologna**



Letter from Philip Morris Italy

Water scarcity is recognized by the World Economic Forum as the greatest global risk in terms of potential impact on both humanity and environment. Growing populations and economies as well as climate change effects are leading to an exponential increase in demand, competition and disputes over freshwater resources.

The **Philip Morris Manufactory and Technology Bologna (PMMTB)** plant in Crespellano, Italy, has implemented the Alliance for Water Stewardship (AWS) Standard with the aim of integrating a water stewardship *modus operandi* in its water management approach. With the achievement of the **Core Level Certification** in July **2019**, PMMTB became the second AWS Certified site in Italy and 1st RRP factory in Philip Morris International (PMI). In October **2021**, PMMTB obtained the **Gold Level Certification** that formalized an increased level of effort and commitment to water stewardship principles and results.

The AWS Standard implemented by PMMTB provides a useful framework for water footprint reduction, implement concrete actions within the wider catchment context, and work in partnership with local Stakeholders for sustainable water resource management and mitigation of shared water challenges.

Every year PMMTB continues to implement sustainable water practices both within and outside its site boundaries, with the aim of leading by example, raising awareness and encouraging other catchment Stakeholders to take on an active role as virtuous **water stewards**.

PMMTB is deeply proud of its transformation process and although there is still a long way to go to build a sustainable future, the AWS philosophy is a great starting point and has already made an incredible difference.

PMMTB's focus on sustainability is also significant in the **Italian Tobacco Supply Chain**. PMI places great emphasis on promoting the production of high-quality tobacco, grown under environmentally friendly conditions. To achieve these goals, as part of the **Sustainable Tobacco Program (STP)**, PMI has developed a set of **Good Agricultural Practices (GAP)**, against which the cultivation processes of suppliers are evaluated, and opportunities for improvement are identified. Good Agricultural Practices are those that are economically viable, safe and oriented towards a quality harvest that at the same time support, protect and improve the environment and respect workers. The program was developed with input from farmers, industry companies, government agencies and universities.

PMMTB AWS Team

PM Italy LEAF Team

PM Italy Sustainability Team



PHILIP MORRIS
MANUFACTURING & TECHNOLOGY
BOLOGNA S.p.A.



PHILIP MORRIS
ITALIA S.R.L.

Water Stewardship Commitment

PMMTB recognizes the fundamental importance of **water stewardship** in ensuring the sustainability of our operations, and the resilience of the local catchment area in which we operate. As such, we pledge to uphold the following commitments:

- **Implementation of the Alliance for Water Stewardship Standard:** we will implement, endorse and uphold the Alliance for Water Stewardship Standard, as well as achieve compliance and continuous **improvements** across **all 5 outcomes** areas: *water governance, water balance, water quality, Important Water-Related Areas (IWRA) and Safe Water, Sanitation, and Hygiene (WASH)*
- **Responsible water use:** we will strive to **optimize** our water use **efficiency** across all aspects of our operations, minimizing consumption whilst maintaining operational effectiveness
- **Water quality protection:** we will strive to **prevent** water **pollution** and contamination events by implementing best practices and technologies to safeguard our water quality
- **Regulatory compliance and respect of human rights to water and sanitation:** we will comply with national/regional water-related legal and regulatory requirements and **respect human rights** to water and sanitation of others, especially vulnerable or minority groups
- **Stakeholder engagement:** we will engage, collaborate and/or partner in an active, **open** and **transparent** way with diverse and representative stakeholder groups on water-related thematic
- **Water governance:** we will work in alignment and in **support** of existing **catchment** sustainability **plans**, with the aim of contributing to strategic water stewardship development in the wider catchment area
- **Education and awareness:** we will create awareness amongst employees, suppliers, and the broader community on the importance of water conservation, pollution prevention, and sustainable water management practices
- **Transparency and reporting:** we will provide a transparent, periodic and **public disclosure** of our water stewardship program, as well as our performance indicators across all five outcome areas and relevant water-related data
- **Resource allocation:** we will allocate resources to successfully comply and maintain all water-related regulatory compliance obligations and water stewardship activities, as well as **continuously improve** the implementation of the Alliance for Water Stewardship Standard.

Through this **Water Stewardship Commitment**, PMMTB reaffirms its dedication to responsible water stewardship and its role in safeguarding this fundamental resource for current and future generations.

Matteo Zompa

Director Manufacturing

Water Stewardship Strategy

In line with [Philip Morris International's Water Stewardship Ambition](#), PMMTB has identified a **Water Stewardship Strategy** which aims to define the current, overarching **mission** and long-term **vision** of our water stewardship journey, as well as the **goals** set to motivate the purpose and direction of our water stewardship plan.

Mission

Our mission is to safeguard local water resources through an [out of the box approach](#), to ensure continuity to our operations and preservation of our catchment area. By integrating sustainable [water management](#) and [stewardship practices](#), we aim to reduce water consumption, minimize pollution, protect freshwater ecosystems and mitigate water-related risks. By engaging stakeholders fostering innovation and technological development, as well as advocating for water education and collaboration to address shared water challenges, we aim to contribute to the resilience and well-being of our local water resources for current and future generations.

Vision

Our vision is to foster a culture of innovation and continuous improvement in water management and stewardship practices and inspire others to prioritize water stewardship in their operations. We aim to be recognized as a model of water stewardship excellence and [catalyst for change](#) in our catchment area. Through innovative technologies for water footprint reduction, strong partnerships with stakeholders and synergic projects to enhance water resilience, we aspire to create a [water-secure future](#) where water risks and challenges are minimized, and shared water resources protected.

Goals

Our desired goals aim to achieve sustainable [water balance](#), optimum [water quality](#), good [water governance](#), adequate [WASH](#) and [IWRA](#) conservation/restoration. They can be summarized as follows:

- **Water conservation** - water footprint reduction by implementing water saving technologies such as water-efficient appliances, smart irrigation systems, wastewater recycling, rainwater harvesting, leak detection/prevention, water-efficient agricultural practices etc.
- **Flood management** - flood risk mitigation and prevention via the execution of flood risk assessments, implementation of flood control infrastructures, adequate stormwater management, and warning/forecasting systems
- **Water quality protection** - prevention and mitigation of water body pollution and contamination, via water quality/bio-monitoring campaigns, adequate and innovative wastewater treatment infrastructures, agricultural best practices etc. to ensure that water sources remain clean and safe for both human consumption and ecosystems



- **Infrastructure maintenance and upkeep** - implementation of proactive leak detection and repair program(s) to identify and address water losses in pipelines, equipment, and infrastructures, with the aim of reducing failures, water losses and associated costs
- **Engagement and collaboration** - engagement with diverse and representative groups of stakeholders (i.e., employees, suppliers etc.) to investigate on shared water challenges, promote best practices and/or investigate on collaboration opportunities that benefit both the site and the catchment area
- **Education, awareness and training** - awareness creation amongst employees, suppliers, local communities etc. on the importance of water conservation, pollution prevention, safe water sanitation and hygiene prescriptions, sustainable water management practices but also emergency preparedness (i.e., for water-related incidents, spills, leaks and floods)
- **Governance and partnership** - support and implementation of catchment sustainability plans, strengthening data collection, analysis and availability especially amongst local stakeholders, enable partnership opportunities especially with public sector, service providers and institutional stakeholders
- **Ecosystem restoration and rehabilitation** - protection and enhancement of important water-related areas and their ecosystems by restorative/rehabilitative actions such as reforestation, habitat destruction minimization, litter collection, improving aesthetic/recreational value improvement, support of biodiversity conservation initiatives etc.
- **Safe and accessible water, sanitation and hygiene** - maintenance of adequate water, sanitation and hygiene infrastructures for employees, execution of dedicated trainings on the importance of good hygiene practices and periodic assessments on water, sanitation and hygiene prescriptions on-site
- **Transparent and proactive disclosure** - establishment of a comprehensive monitoring and reporting system to periodically disclose relevant water-related data, progress of water stewardship program and performance indicators, with the aim of ensuring transparency and accountability.

By consolidating a **Water Stewardship Strategy**, PMMTB has described and motivated our water stewardship **mission, vision** and **goals**, to be considered as the fundamental steppingstones which have led to the development and continuous improvement of our water stewardship **action plan**.

Internal Water Governance

Organizational chart

In PMMTB, the internal governance for water management involves several key positions responsible and accountable for:

- water **management activities** as well as compliance obligations with water-related laws and regulations within our premises
- implementation of the **Alliance for Water Stewardship (AWS) Standard** prescriptions through site and catchment-based actions with the aim to achieving compliance across all 5 outcomes areas

As well as managing the implementation of the AWS Standard and PMMTB's water stewardship journey, specific members of the team (highlighted in dark blue) also have responsibilities for governing water-related compliance matters and verifying requirements in accordance with local laws, regulations and company standards.

The **organizational chart** of the water-related internal governance team well as their **roles** and **responsibilities** are illustrated below:



Internal Water Governance

Roles and Responsibilities



Cristina Tonini

Manufacturing
Sustainability
Manager

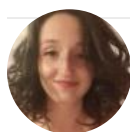
- Ensures Environment Health and Safety compliance within the organization
- Main sponsor of sustainability projects
- Promotion of sustainability best practices within the organization
- Share water challenges with leadership team



**Andrea
Alberton**

Manufacturing
Sustainability
Engineer

- Executes site water balance and identifies WEI/KPIs
- Ensures that water related incidents are investigated and actions taken to mitigate and prevent recurrence
- Liaise with regulators
- Identifies and leads water related improvement actions
- Leads Water Stewardship internal team



Elisa Ferrari

Manufacturing
Sustainability
Engineer

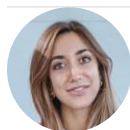
- Ensures that water related incidents are investigated and actions taken to mitigate and prevent recurrence
- Liaise with regulators
- Identifies and leads water related improvement actions



**Gabriele
Andreani**

Coordinator
External Affairs

- Leads External Communication with main stakeholders (industrial & institutional)
- Coordinates the preparation of water related webinar and workshops
- Engages institutional stakeholders for water related project in the catchment area



**Benedetta Di
Prospero**

Digital Executive

- Coordinates external communication activities through social media and corporate website



Cleo Carlotti

Internal
Communications
Lead

- Leads internal communications masterplan
- Coordinates with Sustainability and Project department in the preparation of water awareness campaign: Business Updates and screen materials



**Niccolò
Tonegutti**

Project Engineer

- Prepares project business case
- Prioritizes projects and ensures budget approval
- Leads project execution to be within the agreed schedule
- Coordinates contractor activities



**Manuele
Delmirani**

IFMS Engineer

- Ensures that the wastewater treatment plant and /or other water related infrastructures are running effectively and efficiently
- Leads investigation of water related non-conformities
- Works with the different departments to identify water-related improvement actions
- Cooperates with the Sustainability Department on water glidepath preparation



Federico Sgatti

Process Lead

- Ensures control of Primary Process water consumption
- Investigates water related overconsumptions and prepares dedicated action plan
- Identifies water related improvement actions in Primary process
- Define Primary Equipment Water settings



Enzo Monaco

Line Lead

- Ensures control of Primary Process water consumption
- Leads water related overconsumptions investigations and prepares dedicated action plan
- Leads water related improvement actions in Primary process
- Ensure Primary Water settings to be under control



**Costanza
Koreta**

Project Engineer

- Prepares project business case
- Prioritizes projects and ensures budget approval
- Leads project execution to be within the agreed schedule
- Coordinates contractor activities



Claudio Dessì

IFMS Engineer

- Ensures that the wastewater treatment plant and /or other water related infrastructures are running effectively and efficiently
- Leads investigation of water related non-conformities
- Works with the different departments to identify water-related improvement actions
- Cooperates with the Sustainability Department on water glidepath preparation



PMMTB's Internal Governance Team with the AWS logo during World Water Day 2024

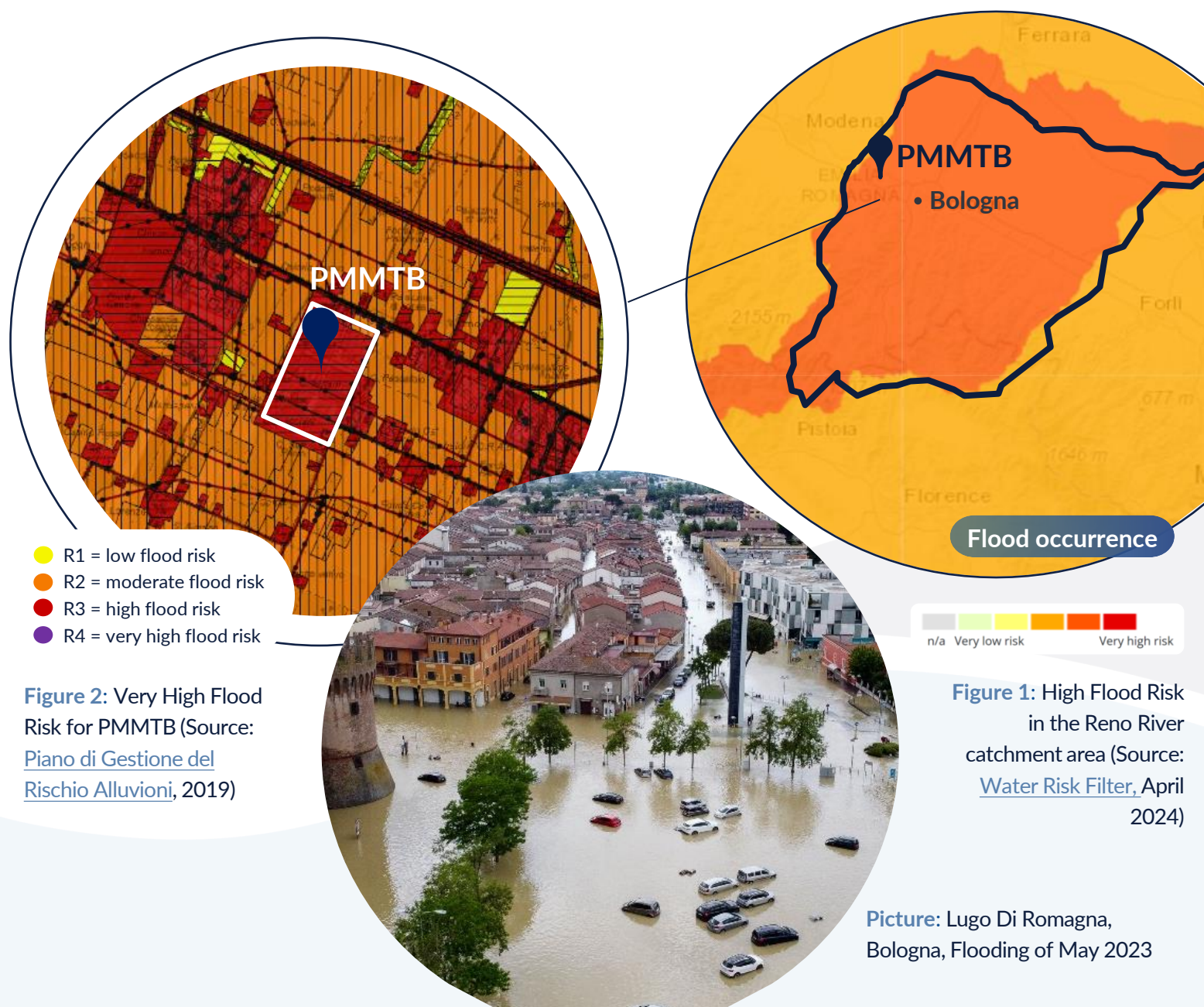
Water Risks and Shared Water Challenges

Since 2019, PMMTB has been conducting **water risk assessments** on the Reno River catchment area, to identify the main water risks faced by the Site, as well as the challenges shared amongst local Stakeholders.

To ensure a detailed and comprehensive analysis, the water risk investigation is conducted annually by using a combination of:

- global tools such as the  and  AQUEDUCT
- publicly available, institutional sources and local environmental portals
- stakeholder surveys

The most relevant water risks in the catchment area are directly linked to **flooding events** (Figure 1 & 2) and **water scarcity** both of which aggravated by the impacts of climate change, which are producing increasingly extreme and catastrophic events.



The high risk of water scarcity in the catchment area, especially in the Bologna Province, is linked to the increasing **temperatures** (Figure 3) and **decreasing rainfalls** (Figure 4), coupled with increasing potable water demands from a multitude of different sectors. This generates an extremely high **baseline water stress** (Figure 5), in which more water is being withdrawn than what can be naturally replenished.

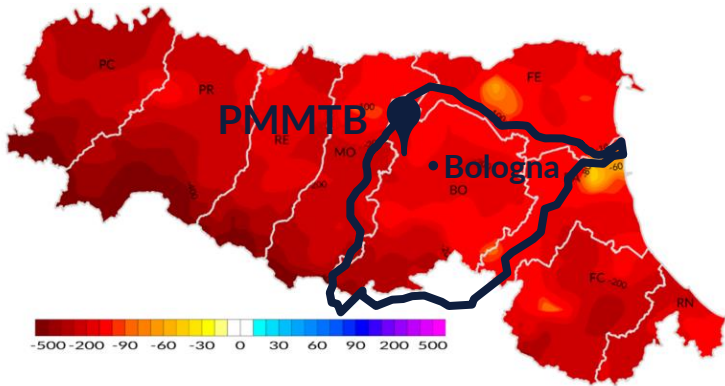
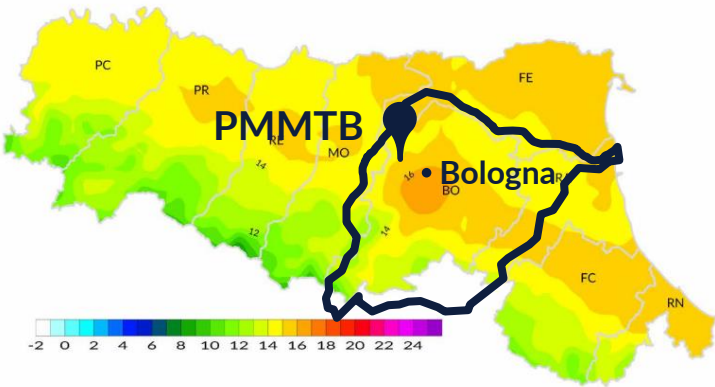
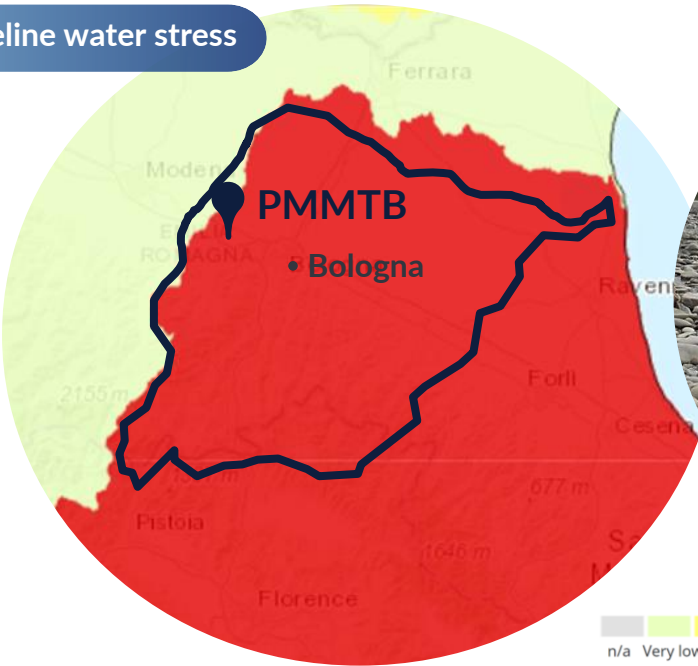


Figure 3: Temperature peak anomalies (Source: Rapporto IdroMeteoClima Emilia-Romagna, 2022)

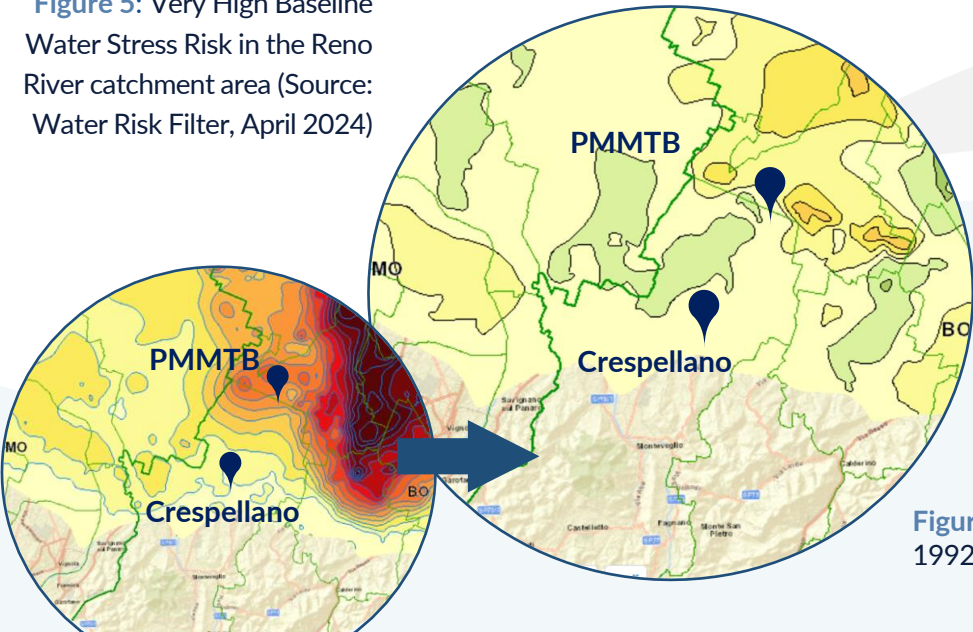
Figure 4: Precipitation anomalies (Source: Rapporto IdroMeteoClima Emilia-Romagna, 2022)

Baseline water stress



Picture: Reno River in Pontelungo, Bologna, May 2022

Figure 5: Very High Baseline Water Stress Risk in the Reno River catchment area (Source: Water Risk Filter, April 2024)



The phenomena of **soil subsidence**, (Figure 6) generated by the over-exploitation of local aquifer bodies, has however improved since the early 1990's due to numerous water resilient policies implemented over the last 20 years in the local territory.

Figure 6: Subsidence levels compared between 1992-2000 (left) and 2011-2016 (right)

Water Stewardship Plan

PMMTB has created a **Water Stewardship Plan** which is periodically updated and structured around all 5 AWS outcomes:



GOOD WATER
GOVERNANCE



SUSTAINABLE
WATER BALANCE



GOOD WATER
QUALITY
STATUS



IMPORTANT
WATER-RELATED
AREAS



SAFE WATER,
SANITATION AND
HYGIENE FOR ALL
(WASH)

The Plan aims to address **water risks**, shared **challenges**, incorporate **best-practices** in current management activities and achieve the **goals** reported in the Water Stewardship Strategy by detailing **actions** and associated Specific, Measurable, Achievable, Relevant, and Time-Bound (S.M.A.R.T) **targets**.

The actions reported in PMMTB's Water Stewardship Plan can be subdivided in 2 categories:

- **Technological** – actions for water footprint reduction and quality improvements, via water saving technologies, recycling, optimization of plant settings, monitoring devices etc.
- **Community/Social** – actions for improving internal and external water governance, WASH provision, status of IWRA's and mitigating shared water challenges in the catchment area

Here forward several actions of PMMTB's Water Stewardship Plan have been reported and described in detail:

Clean-Up Event in Bazzano

Scope: requalification of a degraded area along the **Samoggia River front** in the Municipality of Valsamoggia

Involvement :



Comune di Valsamoggia

and



Results: Collection of more than **80 kg** of waste and involvement of more than **20 people**

Value creation: safeguarding freshwater quality, mitigation of environmental damage to ecosystems, promotion of sustainable practices amongst community members





Biomonitoring Campaign and Benchmarking Network with Catchment Stakeholders

Scope: installation of beehives for the execution of a bio-monitoring campaign with the scope of assessing the presence of environmental contaminants in proximity to PMMTB. Successive development of a data-sharing/benchmarking network with local Stakeholders which perform similar activities in the catchment area

Results: installation of 3 beehives and execution of 2 bio-monitoring campaigns, which detected the presence of glyphosates, analogously to the concentrations present in the surface waters of the Samoggia River and Ghironda Stream (arpae, 2014-2019). Network development with 6 catchment Stakeholders

Value creation: raised public awareness, informed decision-making and implementation of early warning systems for emerging environmental threats.

Rainwater Collection Tank Tutorial

Scope: creation of rainwater collection tank tutorials for public access on media channels

Involvement :  **Comune di Valsamoggia**
 **Comune di Monte San Pietro** and **#wearecob**

Results: creation of 2 rainwater collection tank tutorials, for domestic and agricultural use. Divulcation on YouTube as well as through Municipal channels. Construction of 1 rainwater collection tank by the Municipality of Monte San Pietro

Value creation: community engagement, resilience to drought or water scarcity by reducing the demand for freshwater resource, cost savings by reducing reliance on municipal water supplies



+7%
di evaporazione per ogni grado di aumento della temperatura


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I materiali mostrati possono essere visionati presso FabLab Valsamoggia concordando la visita scrivendo a: hello@wearecob.it

In collaborazione con:

Water Stewardship Workshop in Partnership with Gruppo Hera

Scope: annual water stewardship workshop in collaboration with water service provider and AWS Certified Site  HERA, with local catchment Stakeholders to disclose PMMTB's water stewardship performance, benchmark on water-related best practices, as well as investigate on potential synergies to mitigate shared water challenges and contribute towards a water secure catchment territory.

Results: participation of 20 Stakeholders for a total of 53 attendees. 7 Stakeholders responded to a feedback questionnaire to which PMMTB received positive feedback on its water stewardship journey, actions implemented in relation to the 5 AWS outcomes and efforts to catchment water risks.

Value creation: enhanced communication, networking and relationship building amongst Stakeholders, greater ownership of initiatives and projects, alignment of interests and priorities, capacity building



Water Pledge Commitment

Scope: adhesion to a water pledge commitment organized by the Association,  Impronta Etica with the aim of conserving and protecting shared water resources in the catchment area in a collaborative and synergic way

15 imprese socie di Impronta Etica siglano il "Patto per l'acqua"



Results: participation of 15 Stakeholders,



public disclosure and divulgation of a press release.

Value creation: fostered sense of community and collective responsibility for water conservation, joint contribution to shared water-related goals, raised awareness on the importance of water conservation and the impacts of water risks, promotion of behavioral changes, demonstrated accountability

Employee Engagement

Involvement: internal PMMTB employees and contractors

Scope: annual **awareness-raising** campaigns in relation to sustainability and water-related thematics to enable more informed choices on water use at home and at work.

Campaigns included:

- **tips** on best practice behaviours to have in relation to water, biodiversity and energy
- **internal communications** via Business Updates, Yammer and Info. Points during water-important occurrences
- **quizzes** to test internal know-how and understanding on the AWS Certification
- **water-related infrastructure tour**

Results: engagement of approximately **2,700 employees** and contractors

Value creation: education on the importance of water conservation, efficiency and sustainability, contribution to mitigating risks related to water scarcity by encouraging greater water conservational efforts and behavioural changes



Water saving initiatives and Stress Reduction on Potable Water Network

Scope: implementation of initiatives to:

- optimize and further **reduce potable water consumption** at site-level
- avoid **water consumption peaks** in specific time intervals

Results:

1. avoidance of water consumption peaks and **reduced stress** on water distribution system due to the installation of a modulating valve (2022)
2. ≈ **3,000 m³** of potable water **savings** (2022-2023) due to reuse of motor pump testing water for fire-fighting purposes
3. ≈ **23,500 m³** of potable water **savings** (2023) due to replacement of osmosis system membranes
4. ≈ **4,500 m³** of potable water **savings** (2023) due to the installation of a smart irrigation system
5. ≈ **6.800 m³** of **rainwater recovered** (2024) equivalent to 136 water users

Value creation: enhanced resilience to water scarcity by reducing on-site potable water consumption, conservation of freshwater resources in the catchment area and water stress reduction, promotion of sustainable water practices and management, economic saving in potable water acquisition

Performance, KPIs and Results

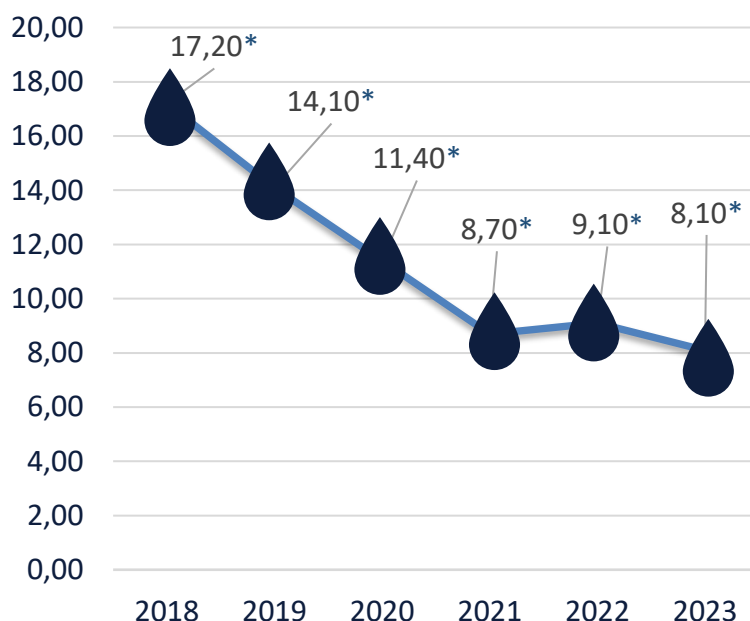
Since 2018, PMMTB has drastically reduced its potable water consumption and consequently the impact on catchment ground and surface water resources. This has played a major role in contributing to the mitigation of water-related physical risks such as water scarcity and baseline water stress that are affecting the catchment territory.

From 2019 to 2023, the absolute value of **saved potable** water was of $\approx 1,583,000 \text{ m}^3$, equivalent to the annual consumption of $\approx 31,600$ water users.

Improvements in PMMTB's water-saving results are monitored and recorded through the **Water Efficiency Index (WEI)***, a dedicated water consumption KPI based on m^3 per Million HeatSticks Produced (m^3/mioHS).

From 2018 to 2023, PMMTB has reduced its **WEI** from $17.20 \text{ m}^3/\text{mioHS}$ to $8.1 \text{ m}^3/\text{mioHS}$.

This corresponds to a **reduction** of $\approx 53\%$ in potable water consumption per m^3/mioHS produced.



Since 2018, $840,950 \text{ m}^3$ of potable water have been reused: the equivalent to **336 Olympic pools!**



Since 2019, **34%** of PMMTB's total water consumption comes from **re-used water**

Since 2018, PMMTB has invested in **innovative water reuse technologies** with the aim of optimizing potable water use and reducing losses



By 2024, PMMTB targets to reduce its potable water consumption by **62%** and consequently reach a **WEI** of $6.44 \text{ m}^3/\text{mioHS}$



Tobacco Supply Chain

GAP Programme

Philip Morris is committed to the sustainable production of tobacco to enable a consistent supply of tobacco products that meet adult smokers' expectations and PMI's quality and regulatory requirements. Philip Morris defines sustainable tobacco production as the efficient and competitive production of quality tobacco in conditions that limit as much as possible the impact on the natural environment, and that improves the socioeconomic conditions of the people and communities involved in its production. Sustainable tobacco production is the logical outcome if farmers consistently apply PMI's **Good Agricultural Practices (GAP)** program.

GAP defines the principles and measurable standards to be met by all those who grow and supply tobacco to Philip Morris.

Principles are short statements that should guide farmers and suppliers working towards sustainability of tobacco production; principles represent overall objectives that PMI expects suppliers and farmers to meet or work towards.

Measurable standards are a set of specific standards that we will use to measure how well the practices on the farm or at the supplier are aligned with the specific principles. These principles and standards are organized around three focus areas (pillars): **Crop**, **Environment**, and **People** (ALP). Governance is the foundation of these pillars and incorporates the management processes that must be put in place to successfully implement GAP.



Cultivation



Environment



People



Tobacco Supply Chain

Call for Innovation: BeLeaf

In 2023 Philip Morris Italia launched the third edition of the **Call for Innovation BeLeaf: Be the Future**.

Executed in partnership with **Almacube**, an innovation hub certified by the Ministry of Economic Development, the [Call for Action BeLeaf: Be the Future](#) addressed to start ups and innovative companies, both Italian and international and with the objective of accelerate, through the open innovation and in collaboration with Philip Morris Italia, the implementation of innovative technologies and solutions applicable to the cultivation, harvesting and processing of tobacco.

The call focused on [smart farming](#), [circular economy](#), [eco-energy transition](#) and [robotics](#).



**We hope you enjoyed PMMTB's
and PM Italy's water
stewardship journey
towards a more
sustainable future.**

