



# ENSURING AN ABUNDANCE OF FRESH WATER

Sustainability Report 2016-2017

An overview of Miya's sustainability performance,  
water operations and water efficiency projects





**WATER IS OUR PROMISE  
FOR A SUSTAINABLE FUTURE**

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# ABOUT THIS REPORT: OUR VISION FOR SUSTAINABLE WATER MANAGEMENT



**2B**

**OVER 2 BILLION PEOPLE  
LIVE IN COUNTRIES  
EXPERIENCING HIGH  
WATER STRESS.**

(UN, 2018)

# A MESSAGE FROM MIYA'S MANAGEMENT TEAM



**This is Miya Water's inaugural sustainability report, outlining the economic, social and environmental aspects of our global water efficiency projects. Our approach is based on a keen awareness of the need to ensure an abundance of water resources, particularly in heavily populated urban areas that require means to sustainably develop and grow. Our vision, as expressed in this report and through our business activities, conveys Miya's underlying commitment to securing an abundance of water resources for current and future generations and to sustainably supporting communities everywhere.**

## Dear stakeholders:

Water is at core of who we are. The average person can only live a few days without water. We need water to plant and harvest our food and to power the many processes and products that are essential to our livelihoods. However, while water may seem to be a plentiful resource - covering over 70 percent of the earth's surface - only about three percent of it can be used without any artificial treatment. Take into account that an additional two-thirds of freshwater is inaccessible because it is stored in glaciers or underground and it is easy to understand why nearly 1.1 billion people lack access to water worldwide, and why 2.7 billion people face water scarcity for at least one month a year.<sup>1</sup>

With an understanding of the state of global water resources, Miya was established in 2008 to change the way that people interact with and use water resources. Driven by Arison Investments USA LLC's values-based business model for creating social and environmental impact - Miya was given an overall purpose of instilling the value of "Abundance", or recognizing that everything exists and taking responsible action to ensure that "what is" remains. Under the new ownership of Bridgepoint Advisors, Miya intends to maintain its value-based approach toward doing business.

Based on these values, we began to develop and implement solutions to optimize urban water distribution systems with the goal of reducing water resource depletion and lowering water concessions' operational costs. However, our water efficiency solutions are not only innovative for the utilities that we work with; our way of doing business combines effective logistic solutions with hands-on work in local communities to foster a sustainable relationship with water resources. Our vision is realized when utilities achieve their water efficiency targets and when

local populations gain uninterrupted access to an abundant supply of water resources.

Overall, Miya manages its concessions in Portugal at the highest level of water efficiency and in addition has completed over 150 global water efficiency projects to both mitigate utilities' financial losses from water mismanagement and to increase awareness on how to use and interact with water responsibly. Many of our projects have facilitated increased water accessibility for people living in diverse countries and communities. For example, a joint project between Miya and the government-owned National Water Commission (NWC) of Jamaica aims to recover more than 70 million liters of fresh water by 2020, which could supply an additional 500,000 people with drinking water in the country's most densely populated areas.

Indeed, our work is increasingly important as planet's natural resources become harder to protect due to growing populations and the increasing severity of climate change effects, such as global warming, extreme weather events, severe droughts and heat waves. In addition, with urbanization on the rise, the demand for immediate access to potable water creates an immediate concern among water utilities, municipalities and governments. Thus, Miya's water efficiency solutions are well positioned to serve a number of the United Nations Global Goals for Sustainable Development (SDGs), such as Goal 3 - Good Health and Well-Being; Goal 6 - Clean Water and Sanitation; Goal 8 - Decent Work and Economic Growth; and Goal 11 - Sustainable Cities and Communities.

This, our first sustainability report, was written based on an understanding that our core business commitment is to achieve social and environmental sustainability in our relationship with water resources.

While in many cases, our clients are motivated to improve their bottom-line and level of service for their users; in others, it is their desire to create positive social and environmental change in the water resources space that attracts them to Miya. As a result, we place high importance on engaging both our internal and external stakeholders on our approach to the issues that matter most for our business - from proper corporate governance and ethical behavior, to management of environmental impacts and our relationship with employees and local communities. These interactions are what drive the success and spirit of our business and they are aspects that continually fuel our purpose - ensuring an abundance of fresh water.

Sincerely,

### Miya's Executive Management Team

**Amit Horman**, Chief Executive Officer  
**Noam Komy Adv.**, VP Strategy and Corporate Development  
**Guy Yasur**, Chief Financial Officer  
**Ziv Oren**, VP Corporate Economics  
**Enrique Castiblanques**, CEO Indaqua  
**Pedro Perdigo**, Chief Operations Officer Indaqua

<sup>1</sup> "Water Scarcity," WWF, World Wildlife Fund, [www.worldwildlife.org/threats/water-scarcity#](http://www.worldwildlife.org/threats/water-scarcity#).

# ABOUT THIS REPORT

## REPORTING PERIOD AND FRAMEWORK

This is the corporate social responsibility report for 2016-2017 for Miya S.a.r.l. ("Miya" or "Miya Water"), a limited liability company and its subsidiaries, including, inter alia, Indaqua - Indústria e Gestão de Águas, S.A ("Indaqua"),<sup>2</sup> BBL Engenharia, Construção e Comercio Ltda. ("BBL"), Miya Water Jamaica Limited ("Miya Jamaica"), Miya Bahamas Ltd ("Miya Bahamas"), Miya Water Projects Netherlands B.V. ("Miya NL"), Miya Water Portugal Holdings S.A. ("Miya Portugal") and Miya Water Spain S.L.U. ("Miya Spain").

## BOUNDARIES OF THIS REPORT

The Boundaries for this sustainability report were defined to include the impacts from Miya's material activities and operations. The projects included in the



scope of this report include those where the company has a significant local presence. A number of the projects were completed prior the reporting period yet were included in the scope of the report due to their material nature to Miya's business.

## Reporting According to the GRI's Reporting Standards

This report was written in the spirit of the Global Reporting Initiative's (GRI) Sustainability Reporting Standards (SRS), namely the GRI's CORE reporting requirements.

In writing and compiling this report, we have attempted to achieve completeness and accuracy of information and data to address each of the material topics. We have, to the best of our ability taken into account our positive and negative impacts, prioritizing reporting based on these impacts and their importance to key stakeholders. Data in this report, which was gathered, compiled, analyzed and recorded by the company, includes all readily available information on significant impacts and activities for the years 2016-2017. As this is Miya's first sustainability report, we strive, where possible to provide comparable data that reflect our performance and impacts over time, but often are only able to provide data for the reporting years. Any updates to the information in this report will be presented, as deemed necessary, in subsequent disclosures or on the company's website at [www.miya-water.com](http://www.miya-water.com). The GRI Content Index for this report is presented on page 74 of this report.

## Contact Person for Questions Regarding This Report

We have designed this report to be accessible and coherent to our stakeholders. For comments, questions or grievances regarding the report and its presentation, please contact us at:

[info@miya-water.com](mailto:info@miya-water.com).

# OUR STAKEHOLDERS & MATERIAL ISSUES

## ABOUT OUR STAKEHOLDERS

As an organization with global operations, Miya engages a diverse array of stakeholders that affect the way we do business. Miya places significant emphasis on identifying and communicating with the stakeholders and groups that we engage with and influence.

Our internal stakeholders are individuals who work with us to achieve our mission. Relevant internal stakeholders for our organization include members of the board of directors, management, employees, and Arison Investments USA LLC - our controlling shareholder during the reporting period.<sup>4</sup>

External stakeholders play an equally important role in helping us realize our vision of water abundance. Relevant external stakeholders include direct clients and their end users, local communities, suppliers,

contractors, business partners, development organizations, public authorities, regulators and industry fellows.

## Identifying Our Stakeholders

We identified the stakeholders relevant to our organization by surveying a number of key stakeholder groups including members of senior management (from our company and our shareholders), managers, consultants and experts who provide services to our company. The conclusions of the assessment were verified by surveying employees, who added their input on the results. The results of the assessment, carried out in 2017, were used to define the issues that are of greatest importance to the company, i.e. our materiality issues.

## Engaging Our Stakeholders

Channels of Communication with Key Stakeholders

Stakeholder Group	Channels of Communication	Frequency of Communication
Employees	Career performance and/or health & safety reviews.	Annual performance reviews and periodic health & safety reviews.
Public Authorities and Regulators	Applications for grants, tenders, concessions agreements and progress reports.	Periodic, as needed, and annual reporting.
Local Communities	Informational campaigns, educational opportunities and surveys.	On-going and annual reviews of activities.
Customers (Direct and End Users)	Marketing communications, including surveys, and performance-based feedback.	On-going and annual reviews of activities.
Development Organizations	Direct communication through events and conferences.	Periodic.
Industry and Competitors	Participation in industry events (many of Miya's key experts are contributing members at the International Water Association); Staying updated on the latest technologies and developments.	Periodic.
Contractors and Business Partners	Agreements and contracts with suppliers and communication on Miya's activities.	Periodic.
Shareholder	Board of directors, shareholder meetings, and economic performance reviews.	On-going, quarterly and annual meetings and reviews of activities.

<sup>2</sup> Miya purchased 50.058 percent of Indaqua in June 2016 and became the full owner of 100 percent of the company's shares in February 2018.

<sup>3</sup> For the purpose of this report, "material" refers to both financially significant entities and those with activities relevant to the material issues identified by Miya's stakeholders through stakeholder dialogues and evaluations.

<sup>4</sup> Arison Investments USA LLC was Miya's controlling shareholder for the reporting period, i.e. 2016-2017. However, as of March 28th, 2019, Arison Investments USA LLC sold its shares in the company to Bridgepoint Advisors, a pan-European private equity firm.

## OUR MATERIAL ISSUES

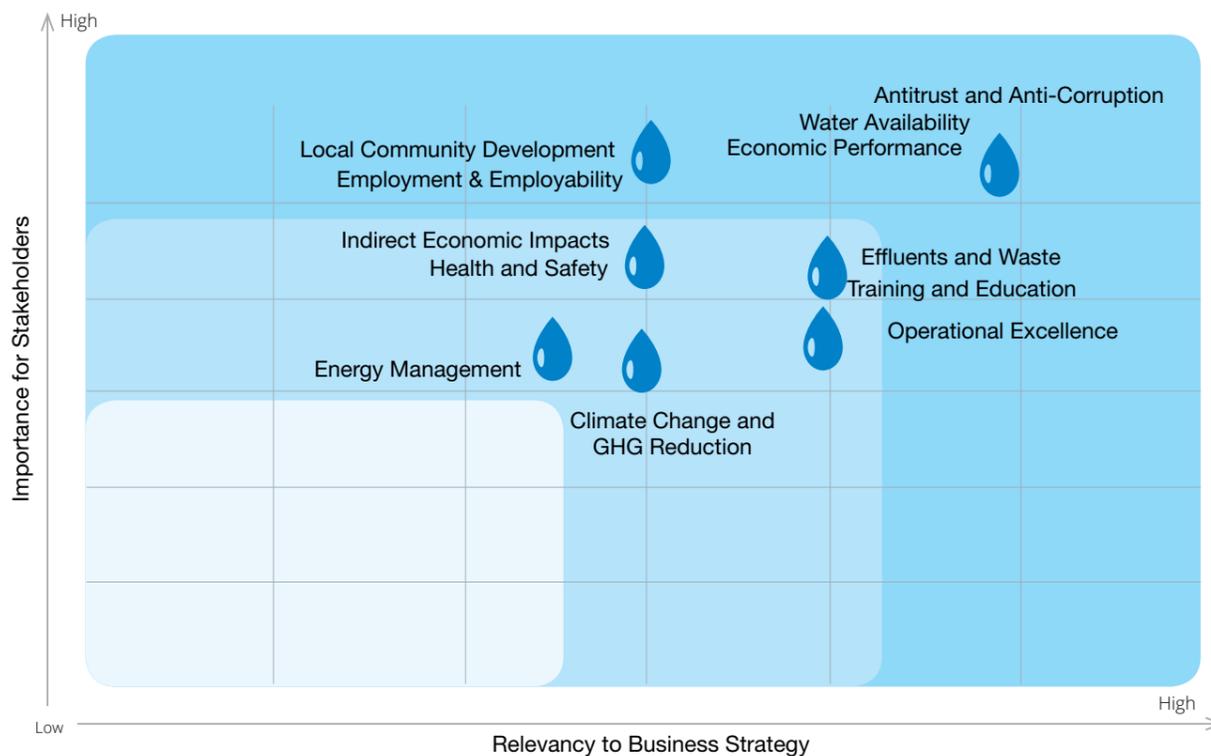
Miya conducted its first materiality assessment in 2017 to gain an understanding of the issues that have the greatest impact on our business activities and our stakeholders. The results of the assessment have proven a valuable tool in directing our understanding of our impact and global influence. In addition, the results of the assessment were used to shape the content described in this report.

Our process for conducting the materiality assessment was based on interviews and surveys of key internal and external stakeholder groups that we identified as relevant to our organization. Our selection of stakeholder groups and relevant material issues was based on an international benchmark study of water efficiency and water utility companies. Using these best practice conclusions, as well as the Global Reporting Initiative (GRI) indicators, we shaped the content of our materiality survey.

The material issues identified in the survey reflect the significant economic, environmental and social impacts of the organization, and are topics that shape our organizational approach towards sustainable development. As such, and where possible, we strive to communicate our impacts and contributions to local communities within the relevant geographical context, while also taking a wider-lens view of how our activities affect progress towards solving global sustainability challenges.

Based on the issues identified, we generated a matrix of material issues, displaying the issues identified as significant to our stakeholders, as compared to their relevancy to our business strategy, determined by management.

## Material Matrix



## List of Material Issues

The following presents the material issues to Miya according to their level of significance in each category, as determined by relevant stakeholders and company management in the materiality assessment.

### Economics & Corporate Governance

- Economic Performance:** Maximizing economic performance and returns on investment from operations to ensure business growth.
- Anti-Trust and Anti-Corruption:** Operating our business according to the highest standards of ethics and corporate governance.
- Indirect Economic Impacts:** Accurately assessing positive indirect economic impacts and minimizing potential externalities arising from our projects and operations.
- Operational Excellence:** Achieving operational excellence through our projects and concessions, while minimizing costs and time to completion for our projects.

### Environment

- Water Availability:** Increasing the number of active service connections and increasing levels of service (maximizing time of supply, optimizing water pressure) for our clients and their end users.
- Effluents and Waste:** Successfully managing the effluents and waste through wastewater collection and treatment services. Ensuring that wastewater is properly treated and preventing contamination of water sources from wastewater collection.
- Climate Change and Greenhouse Gas (GHG) Reduction:** Assisting our clients in reaching their greenhouse gas reduction targets by reducing the amount of non-revenue water in the distribution system, while working towards making their systems more resilient in the face of extreme weather events and other challenges potentially arising from climate change.
- Energy Management:** Controlling the expense of energy resources in the deployment of water resources and cutting energy costs by reducing non-revenue water volumes.

### Social

- Employment and Employability:** Ensuring that all of our employees are endowed with sufficient benefits and opportunities for growth and success.
- Local Community Development:** Working instill best practices in terms of water management and education in location communities.
- Training and Education:** Providing practical and theoretical knowledge to our stakeholders that furthers our company's mission of values-based leadership.
- Health and Safety:** Implementing our projects and operating our concessions using advanced health and safety measures to achieve zero accidents and employee or subcontractor-related incidents.

## MIYA AND THE UNITED NATIONS' SUSTAINABLE DEVELOPMENT GOALS (SDGs)

The United Nations' Sustainable Development Goals (SDGs) are the global community's most important expression of the issues that matter most to the future and sustainability of our planet and its people. The SDGs were adopted by the United Nations' 193 Member States in 2015 as part of the 2030 Agenda for Sustainable Development. Together world nations, businesses, international organizations and individuals are joining forces to make progress in achieving 17 ambitious Global Goals that include ending poverty, hunger, providing equal economic opportunities, ensuring adequate health and reducing carbon dioxide and other harmful emissions.

Our business addresses and touches on these goals, directly or indirectly in a number of ways. However, we believe that our business activities are most relevant in that they have the greatest impact in positively affecting the attainment of the following goals and their associated targets, for businesses, governments and individuals.



Chapter 2:

## **ABOUT MIYA: EFFICIENCY-DRIVEN WATER OPERATOR**

# 700M

**700 MILLION PEOPLE  
WORLDWIDE COULD BE  
DISPLACED BY INTENSE  
WATER SCARCITY BY 2030.**

(GLOBAL WATER INSTITUTE, 2013)

# ABOUT MIYA

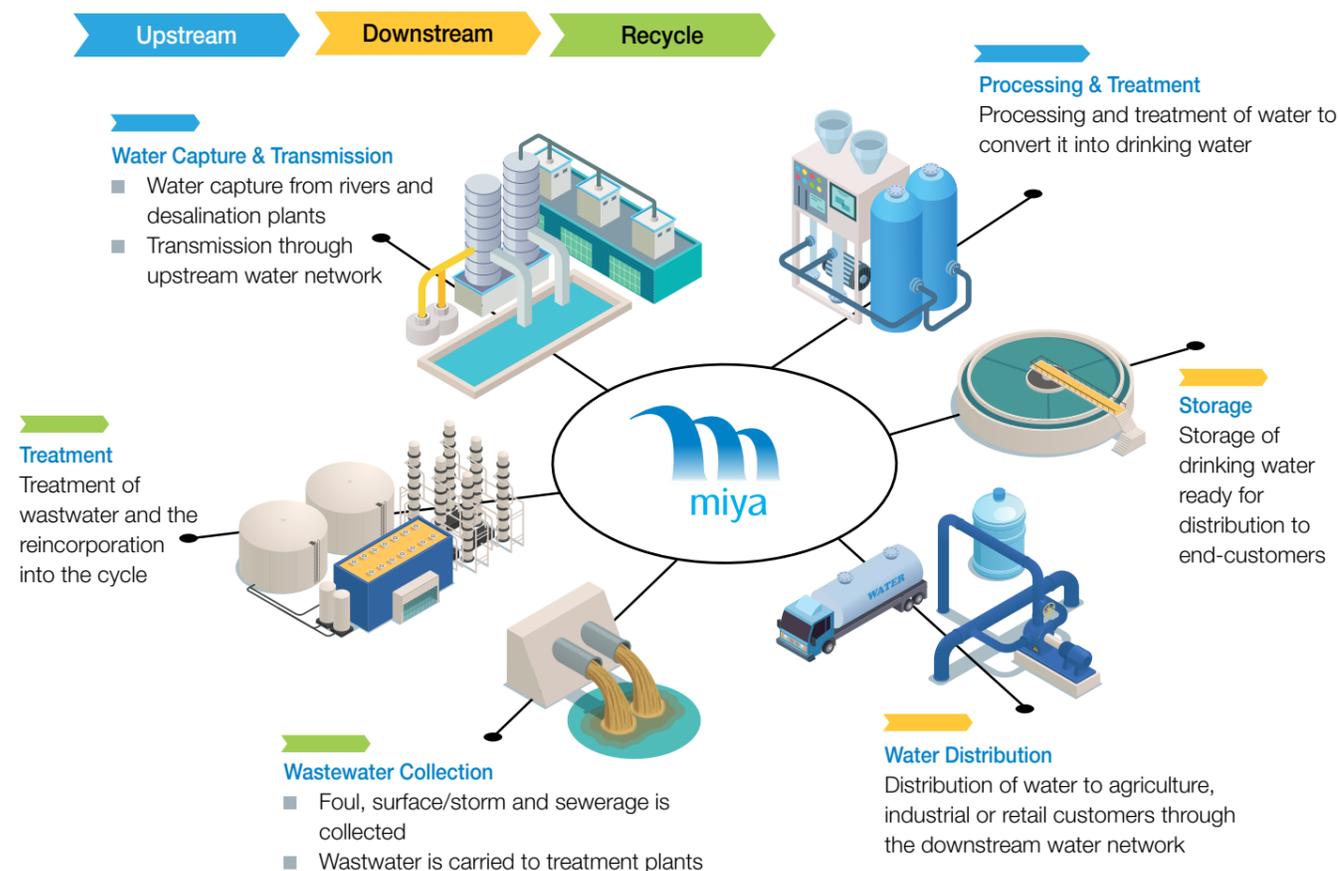
Miya was founded with the vision of ensuring that everyone, everywhere has access to an abundance of fresh water through the efficient management of existing resources.

Miya was founded in 2008 by Arison Investments USA LLC, a global investment company and the business-arm of the Arison Group, with the goal of addressing a challenge of universal concern – more than a third of the world’s drinking water is lost in urban water supply systems mainly due to undetected underground leaks and mismanagement of resources. Miya provides end-to-end integrated solutions for urban water systems and acts as the operator of water and wastewater assets, mainly through long-term concessions-based business model. Miya operates in two segments: as a water operator and in the field of water efficiency. The origins of Miya are reflected in its Water Efficiency segment, in which Miya optimizes urban water

distribution systems (both private and public) through the execution of performance-based water efficiency projects aimed at decreasing the prevalence of non-revenue water (NRW), or water that is pumped into the distribution system, but that is not billed by the water utility. Following its acquisition of Indaqua, Miya established itself in the Water Operator segment, in which it is the private operator of water distribution and/or wastewater collection systems under long-term contracts (usually between 25-50 years).

Miya possesses a full range of capabilities across the water and wastewater value chain, as described in the below graphic.

## WATER AND WASTEWATER VALUE CHAIN



As of 2016-2017, Miya had projects and operations in Europe, the Caribbean, Brazil, Canada, Angola and Southeast Asia through various engagement models, serving more than one million end users. We believe our growth engine is the Water Operator segment, in which we operate, mainly through the concession framework, urban distribution networks in order to

optimize their efficiency and improve quality of service for the public, while working to increase returns for our shareholders. As a service provider in the Water Efficiency segment, the majority of our larger contracts last from five to ten years, though we strive to support water utilities around the world through consultancy, investment, maintenance and knowledge transfer.

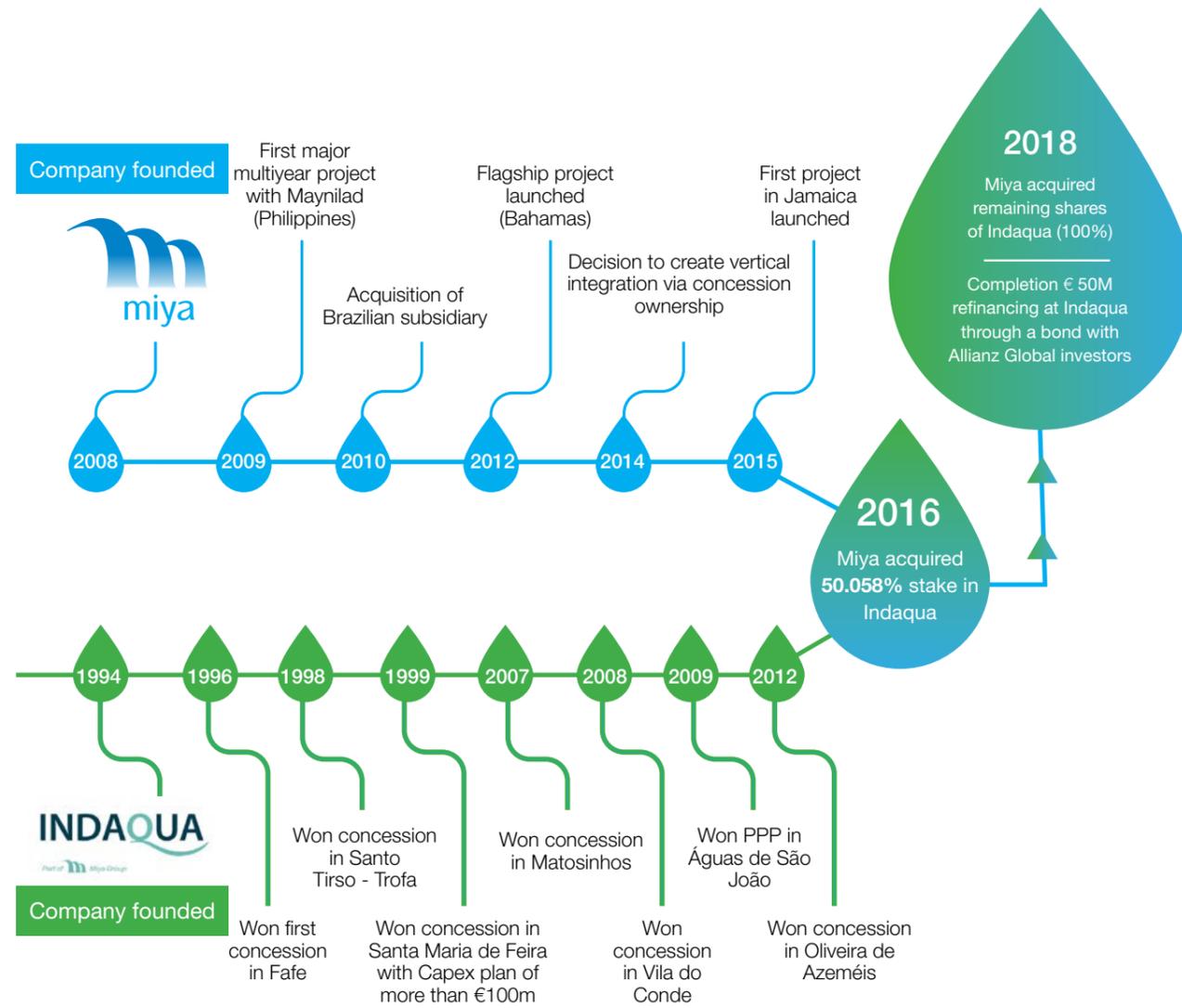
## OUR VISION

Miya’s vision consists of two key elements:

- **Values-Based Approach:** As a company established by Arison Investments USA LLC, Miya places particular emphasis on a morals-based approach to business including several key values such as ensuring Abundance and Sustainability. Based on these core values, implementation of our solutions often includes dialogue with the local community on water use and management, delivered through educational programs and projects to impart our values-based message on a broader scale.
- **Efficiency-Driven Approach:** Miya works to improve the efficiency of urban water systems by providing access to innovative technology and financial and resource management solutions to minimize water losses, improve quality of service to the public and increase the systems’ resilience over time.



## TIMELINE



## WHERE WE WORK

Miya's headquarters are located in Luxembourg, with an additional management office in Madrid, Spain.

As of mid-2016, Miya held a 50.058 percent stake in Indaqua, which is headquartered in Matosinhos, Portugal with operating companies in the cities of Fafe, Santa Tirso and Trofa, Santa Maria de Feira, Vila do Conde, Oliveira de Azemeis and São João de Madeira. It is also the owner of an associated company Vista Water, a water services provider operating in Angola.<sup>5</sup>

<sup>5</sup> Indaqua had a 45 percent stake in Vista Water as of 2017. In 2018, Indaqua acquired the remaining 55 percent of the company to become the full owner of Vista Water.

## Key Locations of Miya's Operations, 2016-2017

Country	Name of Company	Interest Held – Directly or Indirectly – by the Company
Portugal	Indaqua - Indústria e Gestão de Águas, S.A	50.058%
Angola	Vista Water*	
The Bahamas	Miya Bahamas Ltd.	100%
Jamaica	Miya Water Jamaica Limited	
Brazil	BBL Engenharia, Construção e Comercio Ltda.	
Philippines	Miya Philippines Ltd. <sup>6</sup>	
Canada	Miya Water Projects Netherlands B.V.	
Indonesia	Miya Water Projects Netherlands B.V.	

\* As of 2017, Indaqua had a 45 percent stake in Vista Water.

## Map of Our Operations

- Current Water Operation Projects
- Previous Water Efficiency Projects
- Current Water Efficiency Projects
- Company HQ



<sup>6</sup> Miya owns a 98.95 percent stake in Miya Philippines Ltd.

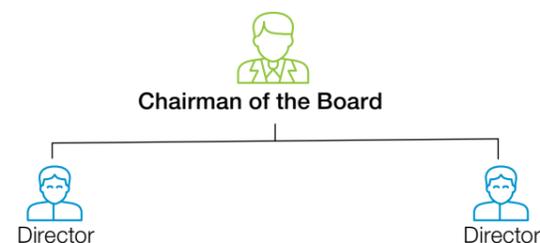
# CORPORATE GOVERNANCE, ECONOMIC PERFORMANCE & INDUSTRY INITIATIVES

Miya is organized in compliance with applicable Luxembourg law and has adopted the Portuguese Corporate Governance Code of the Portuguese Institute of Corporate Governance, which provides recommendations and practices that are to be adopted on a voluntary basis. Miya is subject to disclosure requirements related to corporate actions and the provision of periodic information to the public under the Market Abuse Regulation and the Luxembourg Transparency Law.

## BOARD OF DIRECTORS

Miya is managed by a Board of Directors with three members. The board of directors is responsible for making decisions on all corporate governance issues, as well as the overall strategy and direction of Miya's business. All board members are elected for a period of up to six years, yet with the possibility of being removed or reelected at any time. The board of directors is responsible for assessing the maximum number of positions that the members can hold as directors of other companies, while considering the nature of business and size of those companies. Furthermore, Miya's independent directors have extensive experience in the management of multinational companies, which helps Miya accurately assess potential risks and impacts. As of 2016-2017, Miya's Board of Directors included the following members:

- **Meir Wietchner:** Chairman of the Board of Directors
- **Steven Lynch:** Director
- **John George Tzovanakis:** Independent Director



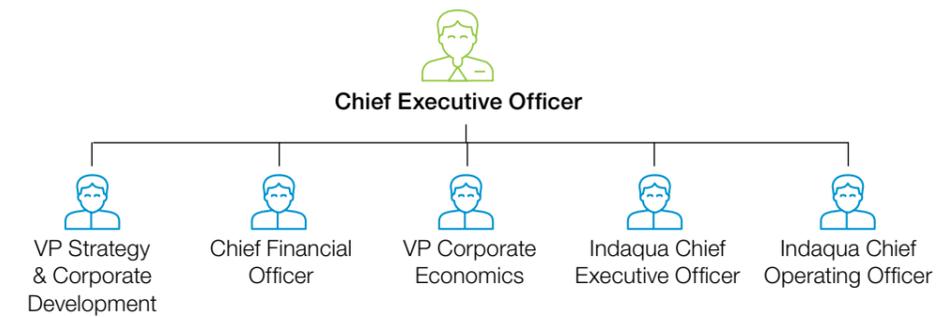
## EXECUTIVE MANAGEMENT

Miya's executive management team is responsible for implementing the Board of Directors' determined management and business strategy, headed by our Chief Executive Officer, who leads a team of management professionals including: Vice President of Strategy & Corporate Development, Chief Financial Officer, VP Corporate Economics and Indaqua's executive management team together with Indaqua's Chief Executive Officer and Chief Operating Officer.

As of 2016-2017, Miya's executive management team included the following members:

- **Amit Horman:** Chief Executive Officer
- **Noam Komy, Adv.:** VP Strategy and Corporate Development
- **Guy Yasur:** Chief Financial Officer
- **Ziv Oren:** VP Corporate Economics
- **Enrique Castiblanques:** Chief Executive Officer, Indaqua
- **Pedro Perdigão:** Chief Operating Officer, Indaqua

Our executive management team works together with key internal stakeholders, namely our employees, suppliers and service providers, to implement our business strategy, and engages in dialogue with our external stakeholders to better understand our solutions' product-market fit, customer service requirements and trends in client demand.



Our aim is to be as transparent as possible with both internal and external stakeholders regarding our corporate governance structure and we regularly update our shareholders and employees regarding alternations to our corporate governance framework.

## INDAQUA'S CORPORATE GOVERNANCE STRUCTURE

Fully acquired by Miya in two stages – controlling stake in June 2016 and remaining shares in February 2018 - Indaqua has operated as a private water concessions player in the Portuguese market since 1994. As such, and at the time of the writing of this report, Indaqua maintains its own corporate governance structure, with integration of the company's CEO and COO on Miya's executive management team, as noted.

Indaqua's corporate governance structure is made up of an Executive Committee, compiled of the Chief Executive Officer, the Chief Operating Officer and the Chief Financial Officer. The Executive Committee manages the affairs of Indaqua's business units

including: Communications, Business Development, Legal Services, Finance and Management Controllers, Human Resources, Information Systems and Customer Support. In addition, the Executive Committee manages the operations of Indaqua's business units in Portugal and overseas, including operational subsidiaries and overseas activities in Angola. The Executive Committee reports to a Board of Directors that is nominated and selected by the shareholders.

## ANTI-CORRUPTION AND ETHICS

Miya is committed to ensuring fair and legitimate business practices wherever the company operates. In implementing our water efficiency projects, it is important for Miya to ensure that our company is transparent and equitable and that we work to address all ethical concerns, both internally and externally. Furthermore, as an external business partner or contractor in infrastructural projects, we assign great importance to ensuring our clients that our business practices are candid and devoid of corruption.



## Our Code of Conduct

Miya has a Code of Conduct that outlines the ethical principles and general rules that all of Miya's corporate bodies and employees must abide by. Non-compliance with the Code of Conduct can result in consequences and the Code is enforced by Miya's Ethics Commission. The Ethics Commission is responsible for instructing, advising and dealing with any ethical concerns, anti-corruption complaints or other relevant issues that may arise. The Ethics Commission does not impose sanctions on individuals with concerns regarding ethical activities, and rather refers the concerns to the appropriate individuals within Miya's executive management team.

## Our Anti-Corruption Policy

The aforementioned Code of Conduct includes an Anti-Corruption Policy through which the company assesses operations for risks or activities related to corruption. The policy is based on two overarching principles: Miya does not tolerate any conduct that may illegally affect public sector decisions made by domestic or foreign civil servants, or private sector decisions as they pertain to clients, suppliers or other professionals that come into interaction with our company. Miya has a zero-tolerance policy for corruption or corrupt activities.

## Anti-Harassment and Abusive Conduct Policy

Miya has an anti-harassment and abusive conduct policy that it requires all of its internal stakeholders to follow. The goal of our anti-harassment policy is to create a pleasant and safe work environment, free of sexual or other forms of harassment and to promote equality among the sexes in the workplace. Any reports of harassment or other inappropriate conduct can be filed with the Ethics Commission through our Whistleblower Channel.

## Training and Communication on Anti-Corruption and Ethical Practices

All of Miya's employees and managers must sign and affirm the Code of Conduct, including the Anti-Corruption Policy. We strive to provide employees with opportunities for education and training on what constitutes corruption or unethical practices and full guidance is administered to all new hires entering the company.

All of Miya's internal stakeholders have a Whistleblower Channel open to them, through which they can report events that constitute, or could constitute, the commission of crimes or a violation of our Code of Conduct, Anti-Corruption or Anti-Harassment and Abusive Conduct Policies. The body responsible for handling and reporting whistleblower claims is the Ethics Commission. Miya guarantees that all such reports will remain anonymous and that no such person or people will suffer reprisals or negative consequences as a result of filing a report.

## OUR VALUES

Our company's activities hold fast to a number of values that act as our moral compass:

- 1 Leadership:** Advancing our vision and responsibility in spreading our mission of less water wasted. Leadership is conveyed in the goals and objectives and we set for our company and our employees, in our innovation, creativity and corporate culture.
- 2 Integrity and Trustworthiness:** Operating in a clear, consistent and open manner in accordance with our core values. We work to ensure that our core values and vision are consistent with our business objectives, while acting in complete transparency towards all of our stakeholders.
- 3 Excellence:** Continuously striving to realize our innate potential. Excellence is achieved by setting a strategy and then operating professionally and precisely to achieve goals, while creating an environment that encourages learning, experimentation and calculated risk-taking, while striving for better performance.
- 4 Responsibility and Accountability:** Analyzing our actions and taking responsibility for their outcomes. By accepting personal and professional responsibility, as opposed to striking it and placing it on others, we can realize our goals.
- 5 Innovation:** Innovation is at the heart of Miya's success in that it encourages the transformation of ideas and available technologies into a new system of solutions that will create a better world. We work to challenge existing concepts and expand our knowledge in order to extend our value proposition.
- 6 Eco-Efficiency:** Endeavoring to set an example as an eco-efficient and environmentally-minded company. In our view, economic efficiency reproduces ecological efficiency, which involves taking advantage of every opportunity to enhance the relationship between value created and resources used.



## RISK MANAGEMENT APPROACH

As a service provider, Miya usually bids on water efficiency projects and on water concession contracts through international tenders published by both private and public water utilities. As a result, management of risks is a key part of Miya's business and is carried out on an on-going basis in order to remain a competitive tender applicant. As part of the tender process, we perform our own due diligence procedures before deciding whether or not to bid on a particular tender. Our analysis is based on an internal assessment of the potential client and project and our approximated likelihood of success (operationally and financially) from the project.

Considerations regarding the precautionary principle, or long-term environmental and social risks associated with a project, are made by our contracting client and controlled for by issuing appropriate permits and permissions in the area where the work is physically carried out (e.g. for interventions into the water system, or for disturbances in service, etc.).

In some cases, obtaining such permits requires social or environmental impact assessments that are sponsored by the client or contracting water utility.

In our work with national water utilities in Jamaica and the Bahamas, the company was asked to take part in social impact audit assessments. However, in both cases, while Miya provided consulting services on how to address the identified social challenges, the entities (i.e. the water utilities) assumed full responsibility for implementing the recommended measures. As such, in acting as a subcontractor, Miya is often subject to the risk management approaches and impact assessment methodologies adopted by our clients.

Furthermore, in Indaqua's work with municipalities in Portugal, the tender bids undergo dual risk assessments for feasibility, anti-corruption and economic factors, both from the side of the company and the relevant municipality issuing the bid.



## ECONOMIC PERFORMANCE

Miya works towards ensuring the efficient management of water resources, but also seeks to generate profits for our clients and shareholders. Indeed, without the operational and financial success of our company, Miya would not be able to attract new and potential customers, business partners, and employees, nor garner the support of relevant international organizations in the water sector. Our employees, management and shareholders are our partners in ensuring transparent and profitable economic performance from our activities. Furthermore, sound financial performance is key to ensuring the continuation of sound water resource management.

The breakdown of revenues generated from the provision of our services as a water operator and

through our water efficiency projects is presented below.

### Miya's Revenue by Business Segment

- Water Operator - 78%
- Water Efficiency - 22%



## Financial Assistance Received from Governments – Subsidized Loans

As the provider of water efficiency services, Miya does not directly receive grants for the provision of our services. However, some of our clients do receive investment grants or subsidized loans from aid or local and international funding bodies and development organizations. These subsidized loans fund a variety of activities: construction of infrastructure, purchase of equipment, and funding for provision of our consulting services, among others.

Miya's clients in the Bahamas - Water and Sewerage Corporation (WSC) - and in Jamaica - the National Water Commission (NWC) - received subsidized loans from the Inter-American Development Bank (IADB) for improvement of water conservation and efficiency performance. Indeed, with the success of our NRW projects in the Bahamas and Jamaica, the IADB is trying to convince other countries in the region to promote similar projects and is arranging delegations from those countries to visit the sites of our projects and learn more about their benefits.

Indaqua has received investment and research and development grants from the Portuguese government and relevant industry organizations. Such grants are used to improve Indaqua's level of service, invest in leading technological solutions and service development, and to fund the construction of vital infrastructure.

## RELEVANT INDUSTRY INITIATIVES, MEMBERSHIPS AND AWARDS

As one of the leading service providers to public and private water concessions globally, Miya takes part in a number of industry initiatives and is an active member in several sector-relevant organizations.

Miya is a member of the International Water Association (IWA), the largest international network of water professionals from over 130 countries, working together to solve global water challenges. A number of Miya's consultants and experts take part in IWA committees and the company participates in the IWA's annual conference on water issues.

In addition, Miya has acted as a high-level sponsor of the Caribbean Water and Wastewater Association (CWWA) Conference.

Miya is the recipient of various industry awards:

- **Global Water Intelligence's (GWI) Sustainability Award, 2009**, recognizing notable contribution to social, environmental and financial stability in the water sector, presented to Miya by former Vice President Al Gore.
- **Global Water Intelligence's (GWI) Project of the Year Award, 2010**, recognizing Miya's work in South Africa. The project saved 50 million m3, which translates into nearly US \$20 million.
- **The IWA Project Innovation Award, 2013**, for Developing Countries in the Drinking Water Supply Category. The award recognized Miya and Philippine water utility Maynilad Water Services Inc.'s partnership for NRW reduction, which added more than 2.6 million new customers to the utility's customer base.
- **The IWA Project Innovation Award, 2014**, for the Asia-Pacific Region in the Operations/Management Category, based on the Philippine project's creation of a specific water-loss management department and the training and certification of up to 450 local engineers.
- **Shortlisted, Global Water Intelligence's (GWI) Performance Initiative of the Year Prize, 2014**, for Miya's mega-scale project in the Bahamas.



Miya presenting its NRW solution to schoolchildren at the CWWA Conference in the Bahamas, 2012

# HUMAN CAPITAL: OUR EMPLOYEES & SUPPLY CHAIN

Miya performs complex operations that involve a variety of technical, functional and knowledge transfer services provided by a diverse group of employees and suppliers. Due to the global nature of our operations, our company prides itself on achieving operational efficiency and supporting our employees and suppliers professionally and personally, wherever possible. In training local employees, engaging local suppliers and subcontractors, or by bringing in international hydrological experts, we committed to delivering on our clients' water loss reduction targets.

## Operational Excellence at Miya

Our NRW water experts provide services to each of our local offices, or directly to the client, depending on the nature of our services agreement. These experts play a central role in the auditing process, or the assessment of feasibility in carrying out a project. In addition, and as a frequent tender applicant, our operational procedures are transparent and clearly communicated to our potential clients, effectively becoming part of our competitive advantage in comparison to similar service providers. Overall, we view operational excellence as essential to our clients' long-term success and level of overall satisfaction from our services.

Many of our operational subsidiaries have ISO 9001 quality assurance and ISO 14001 environmental management certificates. However, in the majority of cases, these indicators are not mandatory to completing the scope of the project and certifications are often only obtained when relevant and requested by the water concessions client. In addition, Indaqua has received various recognitions from leading water organizations in Portugal, such as the "Quality of Service Award in Water and Waste" from the country's Water and Waste Services Regulation Authority.



## OUR EMPLOYEES

Miya employs over 600 individuals around the world, which makes the attractiveness of the company as an employer - or employability - a material issue for the company. Miya operates under the belief that every individual should feel fulfilled, be provided with opportunities to realize their own potential and be actively engaged with the organization, its mission, values and way of doing business. Miya

strictly adheres to fair employment practices and all employees are informed of their rights, such as terms of employment, workers' rights, human rights, and other relevant policies and procedures. As of 2016-2017, aside from a small number of employees who were specifically hired for short term projects in remote locations, almost all of Miya's employees were full-time employees.



### Employees by Gender for Miya's Headquarters and Indaqua (Year-End 2017)<sup>7</sup>



### New Employee Hires for Miya's Headquarters and Indaqua (2016-2017)<sup>8</sup>



### Employee Performance Reviews

All of our employees undergo annual performance reviews. Employees are provided with constructive feedback on their performance by their direct managers, who are also encouraged to present employees with areas for personal and professional improvement. Employees are welcome to pose their ideas for engagement with career or personal development opportunities. As many of our employees play a central role in developing the training and tools that we deliver to our clients, we encourage them to maintain up-to-date knowledge and skills in their professional area of expertise.

### Employee Benefits and Retirement Programs

We provide our employees with the full employment benefits relevant to the legal labor framework in the geographical location where they work. Some of these benefits include: maternity, and where relevant, paternity leave, retirement and pension funds, as well as opportunities to further their career and personal

development after retirement, sick and health-related leave, vacation periods and access to public or private healthcare services, where relevant under the local legal framework.

As of 2017, 100 percent of our employees returned following their parental leave.

### Collective Bargaining Agreements

As a private company, Miya does not have a direct relationship with labor unions or organizations that institute collective bargaining agreements. Indaqua has a total of 496 employees,<sup>9</sup> at its headquarters in Matosinhos, Portugal, working in its seven municipal concessionaires and in its companies operating in Angola. Only about five percent of Indaqua's employees are covered by collective bargaining agreements. The majority of employees covered by the collective bargaining agreements were originally public employees who either joined the company and maintained their previous contracts, or remain public employees and therefore are still covered by such agreements.

## JOB CREATION IN LOCAL COMMUNITIES

In order to implement our solutions effectively, our business model encourages and even necessitates work with local teams and professionals. At all of our subsidiaries and in all of our projects, we hire and train local employees, who work together with our international team of employees to guide, consult and train our clients' workforce. The relevant professional capacities of this local workforce include financial and administrative management, leak detection specialists, and technicians, among other skills. By providing local employees with opportunities to expand their knowledge and skillsets in a number of areas including hydrology, water management,

automated systems management and leak-detection technologies, Miya works to embed its best practices for water and utility management.

All of Indaqua's employees and senior managers are hired from the local community in Portugal. The majority of employees at its subsidiary Vista Water in Angola are from the local community.

In Brazil, nearly 200 temporary employees were hired and trained for the infrastructure improvement projects that were carried out by the company, and all of Miya's permanent full-time employees are from the local community.

### Employees Hired from the Local Community<sup>10</sup>

■ Number of Employees ■ Location ■ Percentage of Employees (2017)



<sup>7</sup> Data on employees by gender was not collected at all of our sites. The sites that collected this data in the reporting period, i.e. Luxembourg, Spain and Portugal, are presented.

<sup>8</sup> Data on new employee hires was not collected at all of our sites. The sites that collected this data in the reporting period, i.e. Luxembourg, Spain and Portugal, are presented.

<sup>9</sup> As of year-end 2017.

<sup>10</sup> "Senior Management" is defined as the General Country Managers of our subsidiary companies, Accounting, Administrative and other Implementation Officers in these locations.

## OUR SUPPLY CHAIN

Miya purchases from a wide base of global suppliers in order to provide our services and deliver our solutions. From our software tools to equipment and materials, we continually conduct research to locate suppliers and service providers that contribute to our value offering, while placing emphasis on purchasing goods and services that are high in quality, suitable for the specific characteristics of the water project and that are cost-effective for our company and the client.

In the past, Miya worked, to a minor degree, with its own manufacturer of technical equipment<sup>11</sup>, however our strategy is to promote relationships with local suppliers and service providers, where possible, engaging an international network of suppliers in order to provide equipment and materials that are most suitable for our clients' needs. Some of Miya's most significant suppliers are from the United States, Europe and Israel. In many cases, the client determines the type and nature of suppliers and subcontractors that are contracted in order to implement a project.

At our headquarters, Miya engages two consultants on a full-time basis to assist in project initiation and bid preparations. At Miya's various locations around the globe, and in the context of local project there, we work with subcontractors and consultants to assist in designing the systems and in performing necessary field work.

Indaqua also engages a significant number of subcontractors to carry out its concession agreements in Portuguese municipalities, and it too purchases a variety of equipment and materials from a wide base of suppliers. In addition, the company imports bulk water from relevant local Portuguese suppliers and exports a portion of the wastewater collected for treatment, in order to effectively provide its service and meet the conditions of its concession agreements. In 2017, Indaqua imported 28,212,291 m<sup>3</sup> of bulk water exclusively from the state-owned company, Águas de Portugal and its subsidiaries.<sup>12</sup>



## ENSURING A SAFE AND HEALTHY WORK ENVIRONMENT

By working to ensure the operational health and safety of our employees and the workplace, we demonstrate our commitment to the viability and success of our business. Our goal is to create a safe work environment and we strive to adhere to the highest international health and safety standards, while also training our employees on how to manage potential emergency situations. We maintain records and track the number of injuries, sick days and other

work-related incidents so that we can improve the quality of our communication and training on health and safety topics for our employees, as well and improve their overall level of health and satisfaction from the workplace.



### Relevant Occupational Health & Safety Standards

Health & Safety Standard	Description	Location
OHSAS 18001:2007	System in place for occupational health and safety	Indaqua – All Sites

<sup>11</sup> Refers to our former equipment manufacturing company, Dorot.  
<sup>12</sup> Águas de Portugal is a Portuguese state-owned company that operates in the water sector.



### Injury Rates, Absenteeism, Sick Leave (2017)<sup>13</sup>

Description of Health and Safety Metric	Number	Location
Work Accidents (total) <sup>14</sup>	54 accidents	Indaqua – All Sites
Absenteeism (except labor union activity and strikes)	4%	Indaqua – All Sites
Absenteeism (labor union activity and strikes)	0%	Indaqua – All Sites

Indaqua applies a system of rules for recording occupational injuries and accident statistics, adopted by the Sixteenth International Conference of Labor Statisticians.<sup>15</sup> The objective in the use of these rules is to provide an adequate statistical base upon which Indaqua can compare its injury rates to the national

and sector-specific average. In collecting relevant health and safety information, Indaqua and all of its operations adhere in all material respects to the conditions and data collection requirements outlined in the international treaty.

### Occupational Health and Safety Training for Our Employees and Clients

In our efforts to ensure that our employees have current information on occupational health and safety standards, we provide trainings on the management of emergency situations, information on best practices for managing identified risks, and general information necessary for the successful management of our engagements. Two employees at our headquarters received training on fire safety including how to properly use fire extinguishers and how to implement emergency action plans. In addition, all employees at our headquarters undergo an online training session on the prevention of occupational safety risks in the workplace. Employees at our subsidiary company in the Bahamas received over 20 hours of training per employee on health and safety best practices, such as how to administer first aid.

standards, such as OHSAS 18001, and courses on the principles of asset management, which included materials on how to safely manage NRW systems. In addition, the project teams provided detailed guidance on how to manage health and safety in the field, including efforts to raise awareness among utility employees for their own health and safety, namely the impact of their work on their surroundings and the general public.



In a number of cases, Miya provides occupational health and safety training for our clients' employees with the goal of ensuring that our solutions are safely implemented and maintained. For instance, in our project with the National Water Commission (NWC) in Jamaica, we provided training on installation and maintenance of pressure relief valve (PRV) systems according to the necessary health and safety

<sup>13</sup> Information on health and safety indicators is collected by Miya's offices but not tracked on a global basis. Therefore, only relevant information from the noted sites is reported.  
<sup>14</sup> According to the "Resolution concerning statistics of occupational injuries (resulting from occupational accidents)", 1998.  
<sup>15</sup> Resolution concerning statistics of occupational injuries (resulting from occupational accidents), adopted by the Sixteenth International Conference of Labour Statisticians (October 1998).

Chapter 3:

# ABOUT OUR BUSINESS: SUSTAINABLE SOLUTIONS FOR INCREASING WATER EFFICIENCY

# 1/3

A THIRD OF THE WORLD'S  
LARGEST GROUNDWATER  
SYSTEMS ARE ALREADY IN  
DISTRESS.

(RICHEY ET AL., 2015)

# SOLVING GLOBAL WATER CHALLENGES

As a leading global player in the water sector, Miya strives to improve urban water efficiency systems for its clients by delivering technological and integrated end-to-end solutions that meet a number of global challenges to sustainable development:

- Demographic changes and rapid urbanization:** World populations are expected to reach 9.7 billion by 2050, with 75 percent of populations expected to live in urban areas. The convergence of these factors is likely to result in urban water shortages in the near future if water resources are not efficiently and sustainably managed.<sup>16</sup>
- Resource scarcity and global warming:** According to estimates, and if population and urban development trends persist, it is estimated that the demand for water will surpass availability by the year 2025, with a gap in availability of 56 percent, leaving approximately 1.8 billion individuals without access to water. These risks are particularly pronounced in areas already suffering water resource scarcity, due to climate change effects, which notably impact the water cycle due to the increased propensity for severe droughts and flooding. These factors not only influence access to water, but also its quality as water systems become more complex and burdensome to manage.
- Increased costs of water services, paired with growing demand:** The provision of sufficient and quality water services costs utilities more than ever before, due to overall water scarcity, aging distribution systems, and rapidly increasing demand. Accounting for and managing the amount of non-revenue water (NRW), or water that is “lost” or “unaccounted for”, remains one of the greatest challenges to water utilities, particularly in the developing world. The World Bank conservatively estimates the cost of NRW to utilities at \$141 billion per year.<sup>18</sup>
- A decline in global water quality and related health issues:** Due to the use of outdated and aging water systems, as well as poor management of related issues such as rusting, leakages and infiltration, the basic human right of access to clean water is currently under threat. Mismanagement of water systems results in poor water quality, as mentioned, particularly in urban areas, which in turn can result in higher levels of poverty, waterborne disease and an overall decline in the quality of life. Indeed, it is estimated that, particularly in developing countries, inadequate maintenance of water infrastructure results in nearly 675,000 premature deaths per year, mainly among children, and that a total of 663 million people lack access to clean water.<sup>19</sup>
- Challenges in sustainable development:** Countries, mainly in the developing world, are currently struggling to meet their infrastructural development goals while maintaining principles of environmental sustainability. This is due to an effort to meet the needs of a growing, more industrialized population, while also facing budgetary challenges. As a result, actors in the developing world are faced with a limited array of choices in sustainably managing their water resources such as investing in pricey water management solutions, deploying generation (desalination) solutions, or, in cases where there are not enough available funds to meet these challenges, maintaining the status quo.

<sup>16</sup> United Nations Department of Economic and Social Affairs, July 2015 ,29.  
<sup>17</sup> “Freshwater crisis,” National Geographic.  
<sup>18</sup> “Report Reveals High Cost of Non-Revenue Water,” Water Online, March 2017 ,20.  
<sup>19</sup> International Finance Corporation, World Bank Group.

# UNDERSTANDING WATER EFFICIENCY AND NRW

## NON-REVENUE WATER (NRW) GLOSSARY

We present the following overview of NRW and water efficiency history and terms to underscore the context and business case for the implementation of our solutions.

### What is NRW?

Up until the early 1990s, there was no reliable or standardized method for calculating water losses in urban water distribution systems, resulting in the general term of “unaccounted for water”. Due to ambiguity of this term, every water utility was forced to determine the meaning for themselves based on their own hydrological, geographical and social context. In many cases “unaccounted for water” was expressed as a percentage of the system input, but this presented issues as the source of this lost water was not accounted for, and therefore could not be targeted with adequate solutions. Thus, utilities were faced with the challenge of effectively managing their performance, or accounting for their financial losses,

and reduction targets could not be defined nor tracked with any reliability or certainty.

Based on this challenge - faced by utilities in the developed and developing world - the International Water Association (IWA) came up with a comprehensive set of indicators, terminology and best practices for measuring and accounting for what is now known as non-revenue water (NRW). The initiative was part of a task force formed in the late 1990s known as the Water Loss Task Force (WLTf) that examined international best practices and developed indicators to manage and measure water loss through the International Water Balance terminology.<sup>20</sup>



### Water Loss Task Force Standard Water Balance Terminology<sup>21</sup>

System Input Volume	Authorized Consumption	Billed Authorized Consumption	Billed Metered Consumption	Non-Revenue Water
		Unbilled Authorized Consumption	Billed Unmetered Consumption	
	Water Losses	Commercial Losses	Unauthorized Consumption	
		Physical Losses	Customer Meter Inaccuracies and Data Handling Errors	
		Leakage on Transmission and Distribution Mains		
		Leakage and Overflows from the Utilities Storage Tanks		
		Leakage on Service Connections up to the Customer Meter		

<sup>20</sup> “The Issues and Challenges of Reducing Non-Revenue Water,” Asian Development Bank, 2010.  
<sup>21</sup> Farley, M (2008), “The Manager’s Non-Revenue Water Handbook – A Guide to Understanding Water Losses.”

As shown in the above table, non-revenue water could account for both authorized consumption, through billed unmetered or unbilled metered and/or unmetered consumption. It also accounts for water losses due to commercial losses such as metering inaccuracies, unauthorized or "illegal" consumption, systematic data handling errors, or real losses from leakages in distribution, storage and in service connections.

The formal definition of non-revenue water (NRW) is equal to the total amount of water flowing into the water supply network from a water treatment plant ('System Input Volume') minus the total amount of water that industrial and domestic consumers are authorized to use ('Authorized Consumption').<sup>22</sup> It is calculated in the following equation:

$$\frac{\text{System Input Volume} - \text{Billed Authorized Consumption}}{\text{System Input Volume}} = \text{Non-Revenue Water}$$

**System Input Volume** is the annual volume input to that part of the water supply system.<sup>23</sup>

**Authorized Consumption** is the annual volume of metered and non-metered water taken by registered customers, the water supplier, and others who are implicitly or explicitly authorized to do so (i.e. fire hydrants or water supplied to government offices). It includes exported water and leaks and overflows after the point of customer meeting.<sup>24</sup>

To summarize, NRW is a key indicator of water utilities' operational efficiency,<sup>25</sup> meaning that less NRW in a particular system indicates improved efficiency of service provision and fewer water resources wasted.

<sup>22</sup> Farley, M (2008), "The Manager's Non-Revenue Water Handbook – A Guide to Understanding Water Losses."

<sup>23</sup> Ibid

<sup>24</sup> Ibid

<sup>25</sup> Ibid



# OUR WATER EFFICIENCY SOLUTIONS

In order to achieve NRW reduction and on-going sustainable management of water resources, we offer solutions and services implemented according to our holistic four-step approach.

As an agile service provider, we allow our clients to determine the services and stages of the process that will best meet their needs. However, as we have developed a holistic approach that offers the possibility to design, build and operate a NRW project, while also focusing on notable outputs and results, it is our recommendation that our clients implement as many stages of the process as they deem feasible within their budgetary and operational constraints.



## Stage I:

### In-Depth Analysis of the Water System

In the auditing stage, we assess the state of the water system before deploying our services to discover how much water is being lost from where and due to which causes. This is a critical first step in designing a NRW reduction and abatement plan. In applying for a project, Miya's first step is to perform a water audit that assesses the current state of water in the project area, together with social and environmental impact assessments, where required. From hydrological testing to surveying reservoirs and natural aquifers, we strive to obtain a 360 degree picture of our clients' water outlook when issuing a proposal for our solutions. Once our proposal is approved and the relevant solutions to the water use problem have been identified, we work together with our clients to

set reduction goals and targets – in some cases up to 50 percent or more NRW reduction – that guide our level of engagement with the client and act as key indicators of the project's success.

As part of our project approval process, we often align our strategy with public policies or available information, from development bodies or in environmental assessments regarding local water challenges. This information informs our decisions about the solutions that will work best in a particular setting, and that will have the greatest economic and social benefits for our clients. In a number of cases, our solutions are deployed to achieve international development targets for water resource management – such as in The Bahamas, through the Water and Sewerage Corporation (WSC), and through Inadqua's activities in Portugal, addressing the European Union's Urban Wastewater Directive (UWWDD) and Water Framework Directive (WFD).

## Stage II:



### Planning, Strategy and Financial Model Development

The second stage of our process involves meticulous planning and development of a strategy based on our findings from the auditing stage. It includes developing and approving a work plan that details required activities, timing for implementation and necessary resources for completion of the project. In addition, using our expertise in the financial factors inherent in water resource management, we assist the client in associating water gains and losses with complementary financial profits and losses. The financial aspect of our solution helps the client envision the return on investment (ROI) from implementation of the project and to effectively communicate progress to relevant stakeholders.

## Stage III:



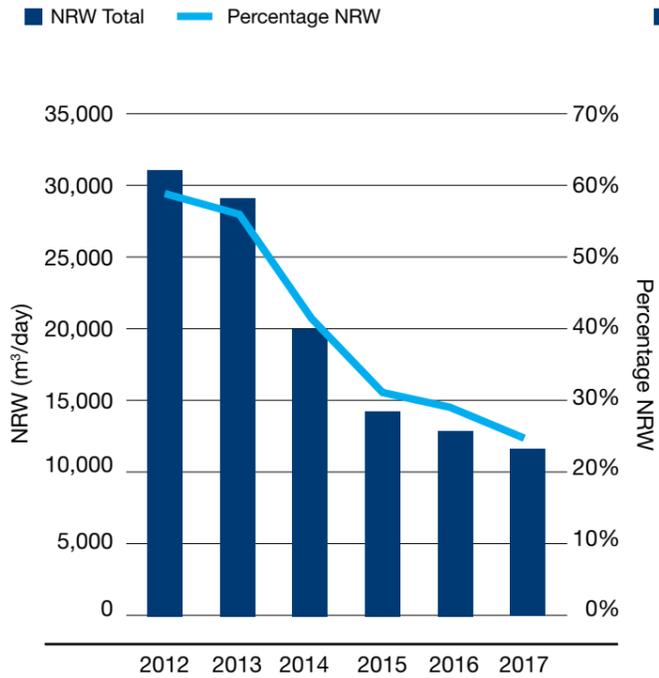
### Implementation

In the third stage, we put the strategy and work plan into action. These services, similar to those outlined above, include physical loss reduction, operational improvements, commercial loss reduction, unique software and network management services, and training and knowledge transfer.

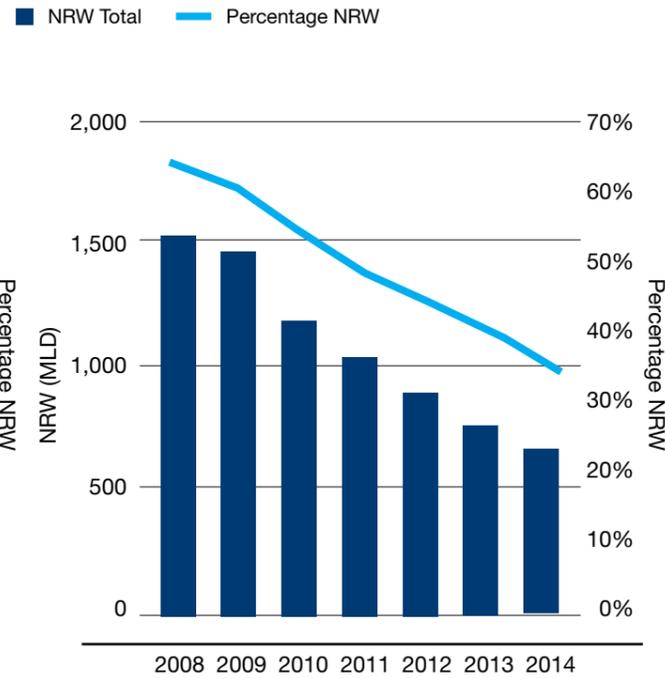
Through the implementation of our projects around the globe, Miya has helped public and utilities reduce their amount of NRW in their systems by over a billion cubic meters. While this is only a small percentage of what the World Bank estimates to be global annual NRW losses – 32 billion m<sup>3</sup> – our contribution is significant when considering that are water efficiency projects are carried out in only a few, yet notable, geographic.



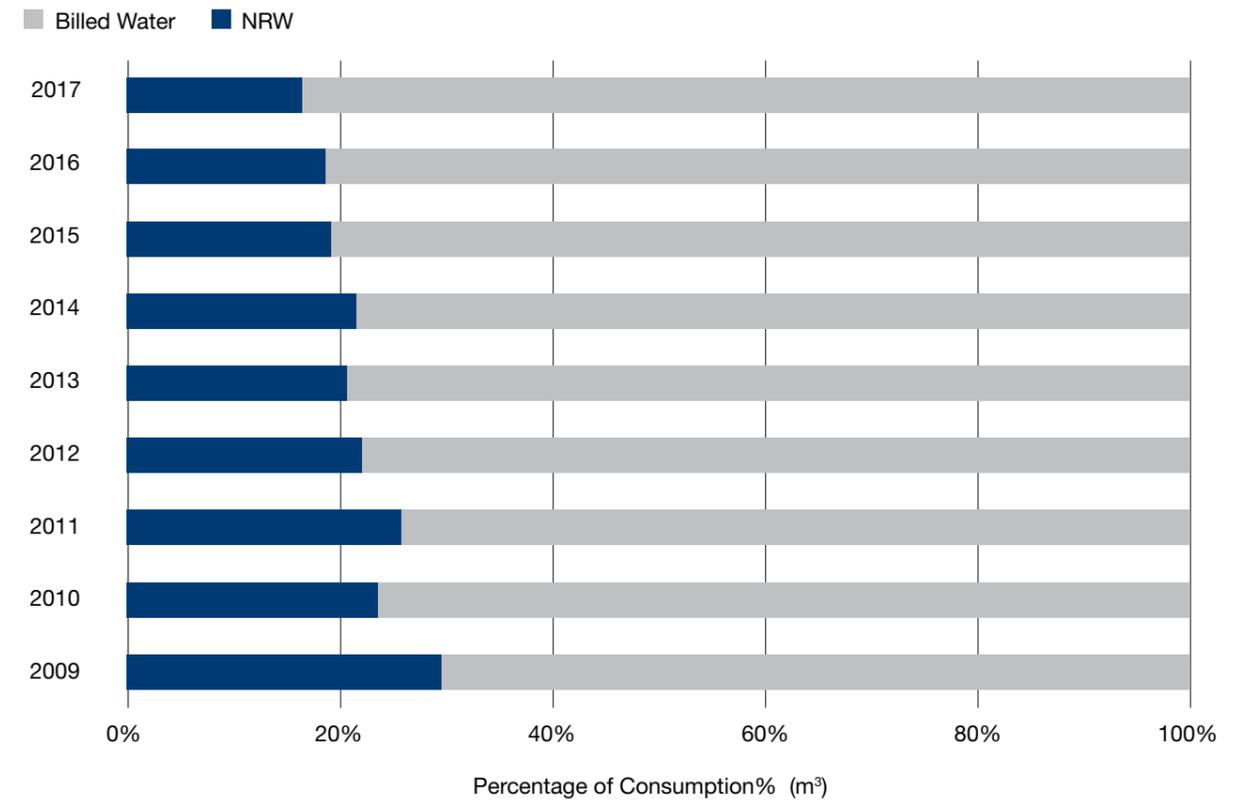
### Miya Bahamas - NRW Reduction



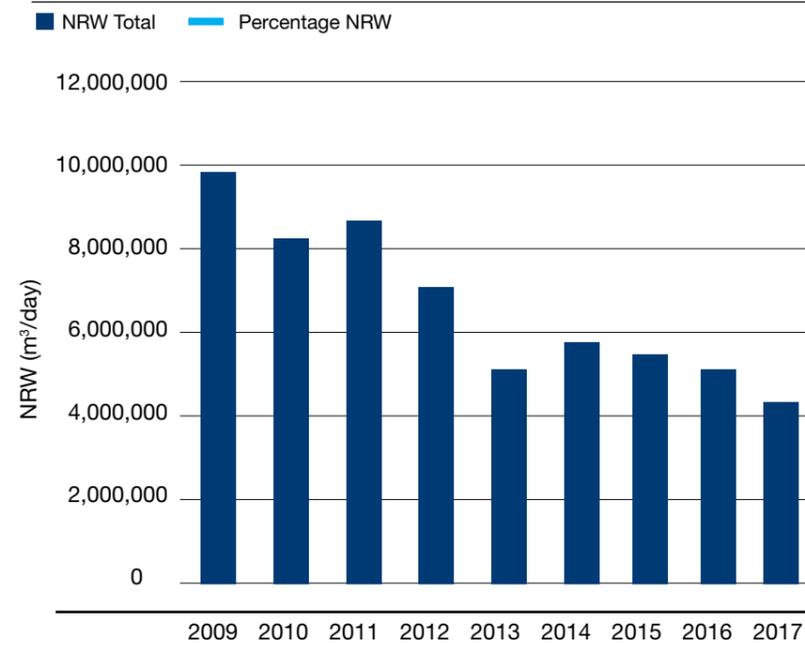
### Miya Philippines - NRW Reduction



### Indaqua - NRW and Billed Water

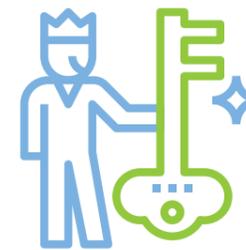


### Indaqua - NRW Reduction



\* Periodic increases in the level of NRW in the total consumption may be due to the addition of concession agreements over the reporting period, which adds to the cumulative volume of billed water.

### Stage IV: Maintenance



In this stage, we work with our clients to maintain their NRW results, including training water utility management and staff in a number of areas resulting in the creation of a skilled and dedicated NRW team that will maintain and improve upon the results of the project once our service term ends.

Working with utilities to help increase their revenues from water consumption is one of the cornerstones of our solution. We achieve this by attempting to decrease the amount of NRW in a particular system,

while maintaining and even increasing the level of billed water through improved service and better, more exact metering. Overall, the majority of our clients see a steady increase in the amount of water consumed in their systems within two to ten years of project implementation.



## Billed Water Consumption

Bahamas <sup>26</sup>		Philippines <sup>27</sup>	
Start (m <sup>3</sup> /day)	22,436	Start (m <sup>3</sup> /day)	871,000
End (m <sup>3</sup> /day)	32,819	End (m <sup>3</sup> /day)	1.267 million
Percentage Increase	46%	Percentage Increase	45.5%

In addition, one of the major indirect benefits of our projects is that the reduction in water losses is directly tied to the improvement in the quality of the water, which has positive health implications for consumers. NRW projects look at mismanaged water resources to determine where the pipes contain holes that are

leaking, which could mean that potable water comes into contact with sewage and/or other contaminants. By deploying the industry's leading leak detection technologies and repair methods, Miya assists water utilities in improving their systems' water quality.

### CASE STUDY

#### Water Use Reduction in Public Schools

#### SABESP, São Paulo



As part of our water efficiency and NRW reduction projects with SABESP in Brazil, we worked with the utility to decrease the amount of water wasted within public institutions, such as government buildings, public schools and fire/police stations. A particular aspect of this project was to reduce the long-term water consumption of 671 public schools in the São Paulo Metropolitan Region by 10 percent.

Short-term reductions in water consumption were achieved by installing low consumption toilets, automatic taps, performing leak detection services and repairs, and by performing infrastructure maintenance. Long-term savings were achieved by training the student bodies and teaching staff on topics of water awareness and water conservation. The training included a general overview of water conservation techniques, environmental issues and responsible best practices and habits.

With six months of completion of the three year project, water consumption decreased by 30 percent for the public schools, making the project three times more successful than the original goal. In addition, a monthly average of 123,514 m<sup>3</sup> was saved through the project, and the project's ROI was achieved within 15 months. Most importantly, the training and education on sustainability and environmental issues created a major change in the attitude of the students. Where they were once indifferent, the program succeeded in making them responsibly aware of the importance of water conservation.

# OUR WATER AND WASTEWATER SERVICES – INDAQUA

Through our subsidiary Indaqua, we operate, within six municipal concessions and one public-private partnership (PPP) company, comprehensive solutions for managing the entire water cycle, including the distribution and collection of water and wastewater resources. Indaqua is the largest private operator of municipal concessions in Portugal and provides comprehensive water and wastewater services.

Indaqua is focused on the downstream and recycling services within its value chain, but also continues to provide upstream services on a small scale due to the nature of its municipal contracts. As mentioned, these contracts tend to last between 25-50 years and involve the development of water distribution networks with a focus on downstream water supply and wastewater collection.

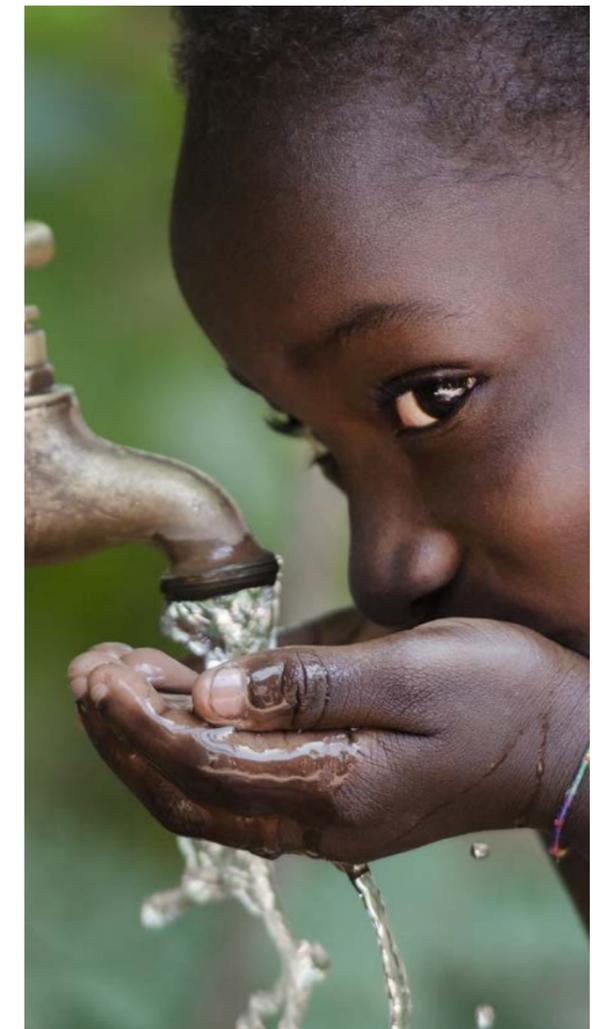
and wastewater services, and in efforts to comply with relevant regulations and industry best practices. In addition, Indaqua regularly tests the quality of treated wastewater to ensure that the outcomes of the analysis are in accordance with the law.

### MANAGING EFFLUENT DISCHARGE

Alongside its provision of water distribution services, Indaqua treats and disposes of wastewater, including basic sanitation services. Indaqua collects wastewater from five Portuguese municipalities and operates wastewater treatment plants in two of these municipalities.

Indaqua provides wastewater collection and treatment services directly to end users through its municipal and public-private service agreements, making efforts to ensure comprehensive management of the entire water cycle – from distribution to wastewater collection, and in some cases treatment. Indeed, through its municipal contracts, Indaqua has vastly expanded the water and wastewater coverage rates for its concessions, investing hundreds of millions of Euros in the process.

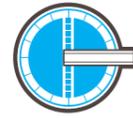
In addition, Indaqua specializes in minimizing the volume of wastewater infiltration in the system, which in turn impacts the volume of wastewater that needs to be treated. As a result, Indaqua adheres to strict quality standards when testing the quality of the treated wastewater to minimize the impact of harmful effluents. These standards were determined through decades of experience in providing water



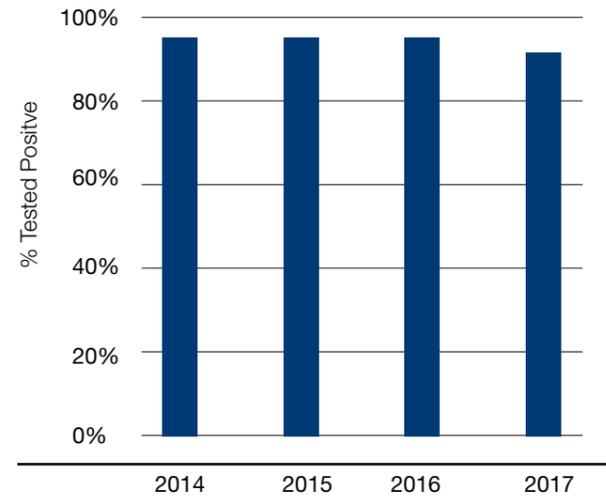
<sup>26</sup> The data for billed water was measured from 2012 (Baseline) to 2017 (End).

<sup>27</sup> The data for billed water was measured from 2008 (Baseline) to 2014 (End).

## Percentage of Positive Results for Treated Wastewater



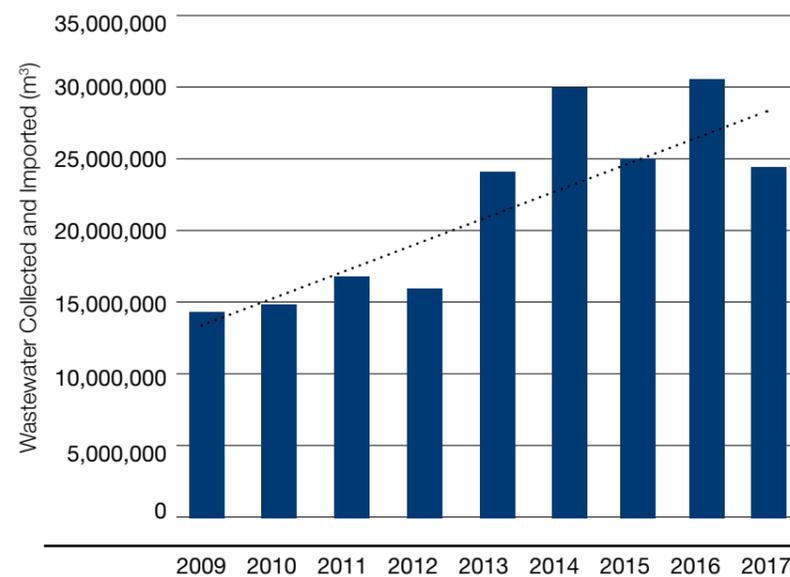
### Quality of Treated Wastewater



## Wastewater Collected for Treatment



### Wastewater Collected



## ENERGY MANAGEMENT AND REDUCING GREENHOUSE GAS EMISSIONS

Energy efficiency benefits and decreased energy costs are key benefits of NRW reduction as they aid water utilities in maximizing their utility in terms of the volume of water that is pumped through the distribution system. By reducing this volume, utility companies can reduce operational expenditures. Thusly, and as an indirect benefit, utilities are able to contribute to their national energy reduction targets and goals. To emphasize, if the energy use for pumping through a given system is 0.75 kWh/m<sup>3</sup>, for a town with 100,000 connections, a loss reduction of 250 liters/connection/day would result in emissions savings of 6.8 million kWh per year – worth approximately 1\$ million per year.<sup>28</sup>

For example in the Bahamas, the local water utility Water & Sewerage Corporation (WSC) saw a 57 percent decrease in energy expenditures during the project and over the years 2012 through 2017. In addition, there was a total decrease of 3,630,691 kWh in the energy consumption of the project over those years.

The energy management effects of NRW management go hand in hand with increased climate change resilience - an issue particularly relevant for island nations, such as the Bahamas, Jamaica and the Philippines where Miya has carried out various projects, and for countries in risk of drought. By

reducing emissions from decreased water pumping while providing water services to more clients, NRW reduction produces better energy efficiency and climate change reduction effects - that is, compared to other more energy-intensive solutions, such as desalination or water treatment plants.

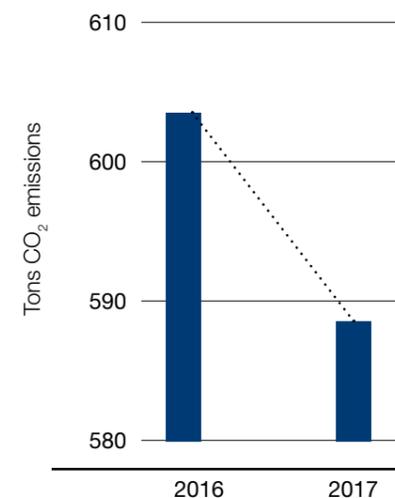
In addition to enabling our clients to reduce their energy use, expenses and greenhouse gas emissions (indirect) through the provision of our solutions, we also work to reduce our own energy use and emissions from operations.

Despite an increase of approximately 120,000 service connections for both its water and wastewater services from 2009 to 2017 – as well as the addition of three additional concessions in this period - Indaqua has managed to maintain a relatively even level of energy use. Indaqua has applied efficiency measures, particularly in reducing water losses and the infiltration of rain water into the sewerage system, in an attempt to limit the increase in the use of energy resources.

Meanwhile, and with regards to provision of its services through its fleet of cars, trucks and motorbikes (which, in the case of Indaqua, account for direct emissions as they are necessary for the provision of service), Indaqua has reduced its carbon dioxide (CO<sub>2</sub>) emissions by nearly 3 percent from 2016 to 2017.

## Indaqua – Carbon Dioxide (CO<sub>2</sub>) Emissions from Service Provision Fleet

### CO<sub>2</sub> Emissions from Indaqua's Service Provision Fleet



<sup>28</sup> "Using Performance-Based Contracts to Reduce Non-Revenue Water," The World Bank.

Chapter 4:

## SHARING OUR VALUES AND GENERATING IMPACT FOR A BETTER TOMORROW

96%

OF THE POPULATION IN  
MANILA, PHILIPPINES,  
HAS 24/7 WATER SERVICE,  
INCREASED FROM 65%

# INDIRECT ECONOMIC BENEFITS AND POTENTIAL EXTERNALITIES

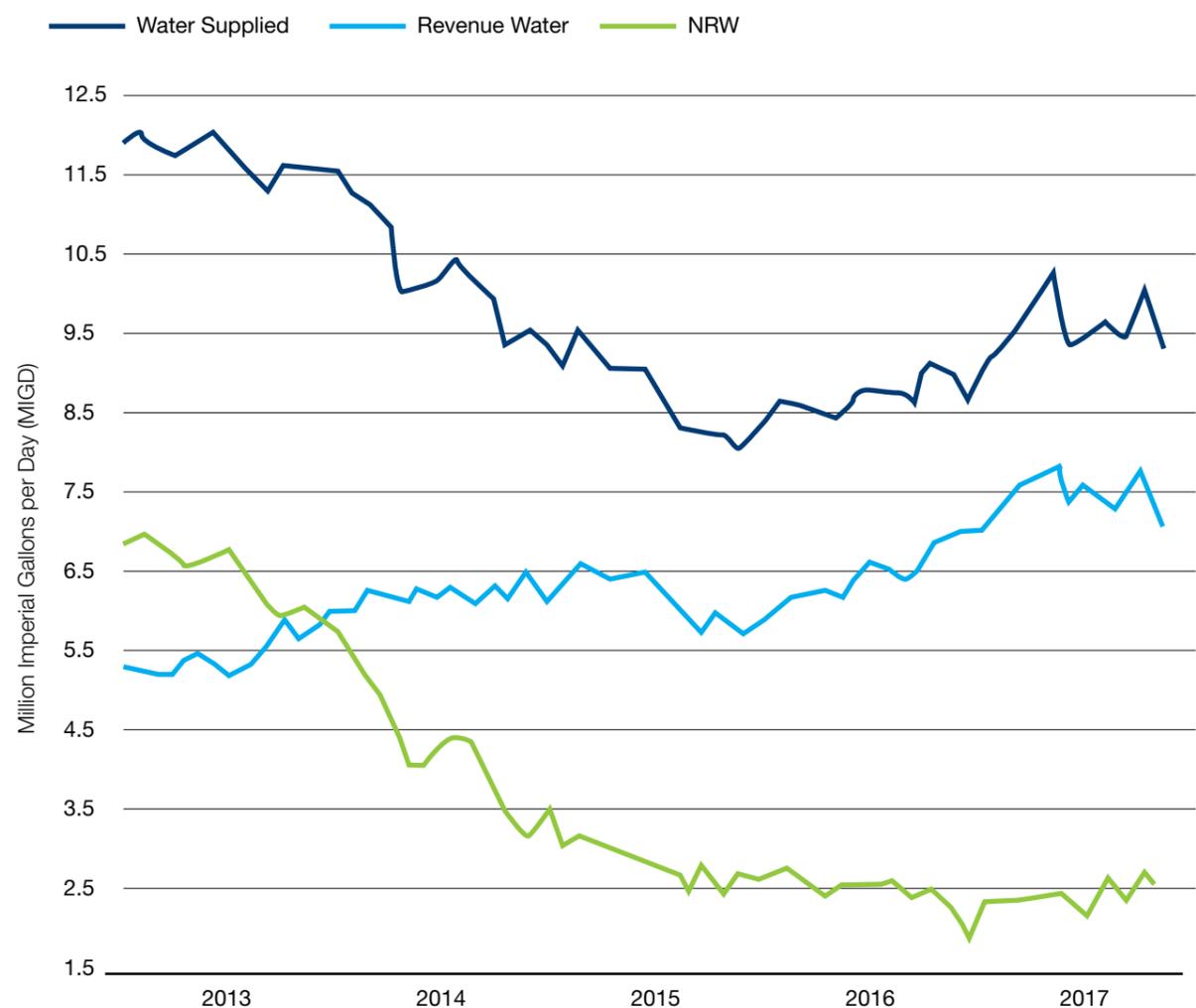
The benefits of our solutions are not limited to effective NRW reduction for water utilities; within the course of the project or over time, our clients are able to realize significant financial and economic benefits.

The vast majority of our clients are able to realize financial benefits from the implementation of our projects through higher revenue generation due to either the reduction of commercial losses, through minimizing under-registration of consumer meters and the detection of illegal connections, or the availability of more water resources for sale to existing or new potential customers due to the reduction of the physical losses. In addition, our solutions assist our

clients in minimizing their overall operational expenditures, which results in lower water production and purchases. This in turn positively impacts the state of their energy and chemical bills. Finally, our solutions aid in decreasing utilities' capital expenditures due to a minimized need for water investments, paired with fewer breaks in system service due to better maintenance and system upkeep.

## Miya Bahamas – NRW Compared to Revenue Water

### New Providence NRW Reduction 2013-2017

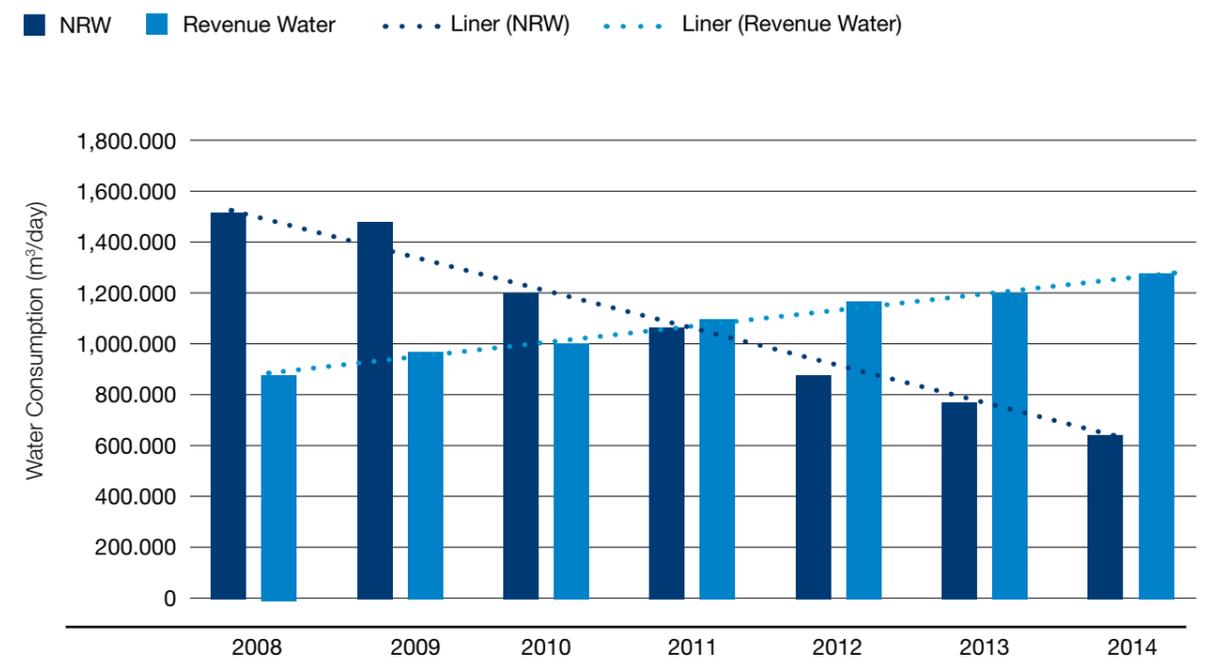


## Miya Bahamas – Estimated Financial Benefits of Project

	2013	2014	2015	2016	2017	Total
<b>Cost Savings (B\$)<sup>29</sup></b>	266,998	3,301,060	6,772,028	7,160,388	5,170,043	22,670,515
<b>Revenue Increases (B\$)</b>	1,722,435	5,476,460	4,769,820	5,520,625	9,583,805	27,073,145
<b>Total Benefit (B\$)</b>	1,989,433	8,777,520	11,541,848	12,681,013	14,753,848	\$49,743,660

## Miya Philippines – NRW Compared to Revenue Water

### NRW Compared to Revenue Water

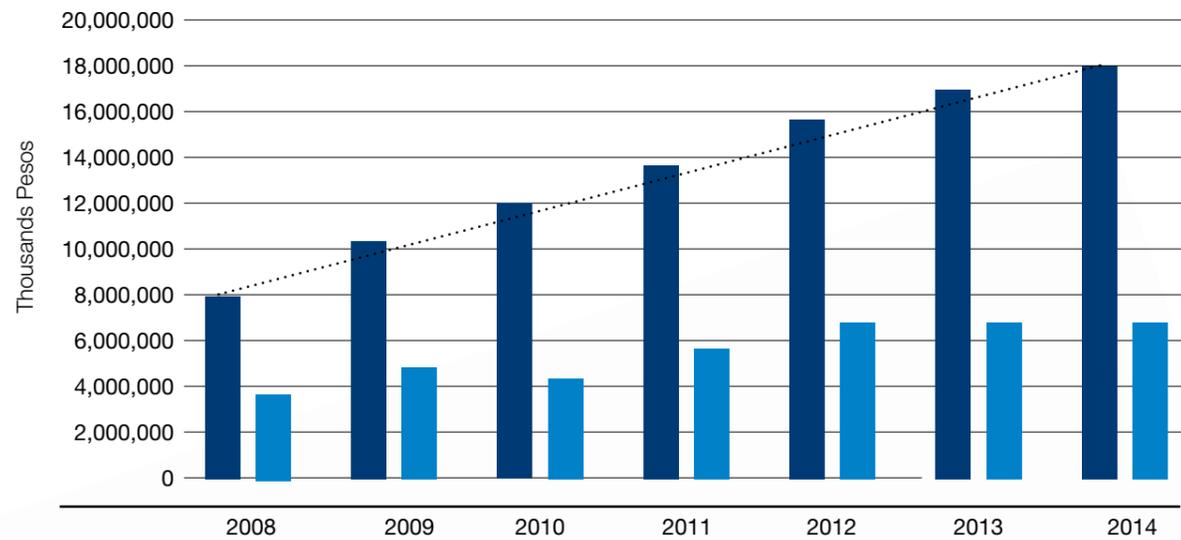


<sup>29</sup> One Bahamian Dollar (B\$) equals one United States Dollar (USD\$).



Revenue to Utility from Water Services

■ Revenues ■ Operational expenditures ..... Liner (Revenues)



Potential Negative Economic Externalities

As a company, Miya takes into consideration that we may exert some negative indirect economic impacts through our projects, such as, for example, job and service-provider replacement (at least temporarily during the project implementation process), an increase in water tariffs or minor disruptions to local commerce in order to repair main and pipe leaks.<sup>30</sup> When it comes to increases in the price of water, Miya strives to help utilities achieve their targets of more connections in order to counteract their level of investment as much as possible. However, and in some cases where the ROI takes longer to realize,

some utilities decide to increase their water tariffs in order to cover the cost of investment. We note this indirect economic impact as the sole decision of our clients, based on their own financial and operational considerations. In Indaqua our investment plan increases the tariffs, but this is in order to support a significant investment in improvement in service coverage and levels of service. In our projects we have no control over the tariffs. Part of our work entails field work, which may cause disruptions in the roads and transportation methods, but this is a minor negative effect.

<sup>30</sup> Due to infrastructure work that may temporary or permanently shut down roads and thoroughfares or limit access to centers of local business.

# IMPROVED LEVELS OF SERVICE

One of the major challenges that water utilities in highly populated urban areas face are water service cut offs, disturbances or failures.

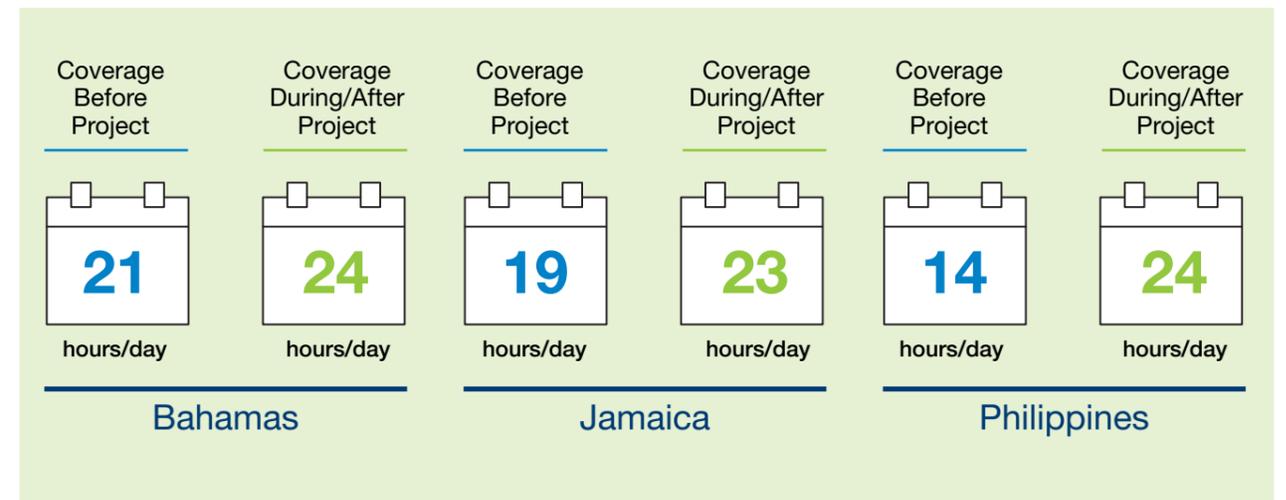
These are often due to poor management on the part of the utility, but can also be the result of physical losses from pipes, valves, and hydrants, or insufficient metering. In developing countries, water service disturbances are commonplace and many local communities are not aware of what it means to have on-demand water available at all times in their homes and businesses. A lack of service consistency decreases public loyalty in the water utility, thereby

encouraging illegal or unauthorized connections, a lack of desire to pay water bills and even a reliance on bottled or purchased water as opposed to publicly provisioned water services.

As a result, one of the key KPIs that Miya measures in its projects is the level of service, with the goal of reaching 24/7 service consistency wherever possible. Indeed, nearly all of our projects have recuperated 24/7 service for the customer.



Level of Service Coverage (Hours/Day)



## CASE STUDY

### Increasing Utility Revenues through Meter Replacement

#### SABESP, Brazil

As one of the world's largest utilities serving a customer base of over 27.9 million residents in the highly populous metropolis of São Paulo, SABESP suffered significant financial losses due to poor metering and the under-registering of customers.

In order to assist SABESP in recovering its losses, Miya worked with the utility to install, design and implement over 26,000 new meters in a period of 36 months. These meters were installed for SABESP's large customers, which are usually commercial business owners, which accounted for 34 percent of the utility's revenues. Thus, it was critical to achieve the proper sizing and calibration of the meters in order to improve the accuracy of their readings and to maximize the utility's revenues.

The project was highly successful and eventually the utility fully took on the task of installing and

designing the metering network, with Miya only consulting for the initial 12 months. The utility continues to generate benefits from the metering improvements and to further improve their systems based on best practices.

As a result of meters installed SABESP was able to achieve the following results:

- Increase of 20 million m<sup>3</sup> in total metered consumption over the three-year contract period
- Elimination of commercial losses due to inaccurate metering
- Dramatic increase in total billable consumption from one of the utility's most significant customer segments
- Increase in revenues of approximately USD \$36 million, or double the initial amount invested



# KNOWLEDGE TRANSFER AND NRW TRAINING OPPORTUNITIES

An integral aspect of our projects is providing utility employees and subcontractors with knowledge, skills and know-how on how to manage, service and maintain the NRW and water efficiency solutions that we implement.

## TRAINING AND CERTIFICATION PROGRAMS



In nearly all of our larger projects, training is a key aspect of the services that we provide, with classes and educational material delivered by Miya's employees working in regional offices, directly by other utility employees (many of whom have received prior training from Miya) or through partnerships with local entities. In some cases, and when requested by the customer, we provide the opportunity for courses delivered by international water experts. In addition, these experts work closely with our employees to develop and refine our training curriculum, based on the clients' specifications.

In Manila, Bahamas and Jamaica, we have relied on world's best experts in various fields (leak detection, pressure management, hydraulic modeling, meter optimization etc.) to train our local staff, local subcontractors and the clients' staff. In Manila, the client, Maynilad Water Services Inc., created a NRW unit with over 400 new engineers whom we trained and managed during the project; in Jamaica we worked to revise many of the client's

Standard Operating Procedures before we started the implementation stage of the project. In addition, in Jamaica, we worked with the local training and human resource developer HEART Trust/NTA. The majority of the trainings they provide for the utility's employees are on ways to improve levels of service delivery and engagement with the local community – both of which are key metrics that the utility seeks to improve.

The training and certification courses extend from a few days of intensive lessons and, when relevant, up to a month, with the utility employees' existing responsibilities and willingness to learn taken into account. Generally, all levels of utility employees, from vice presidents to managers and on to maintenance staff, engineers and client service staff are provided with opportunities to participate in the training courses. At the conclusion of our training programs, there are opportunities for the participants to receive certifications, verified through their performance on exams and the delivery of work products.



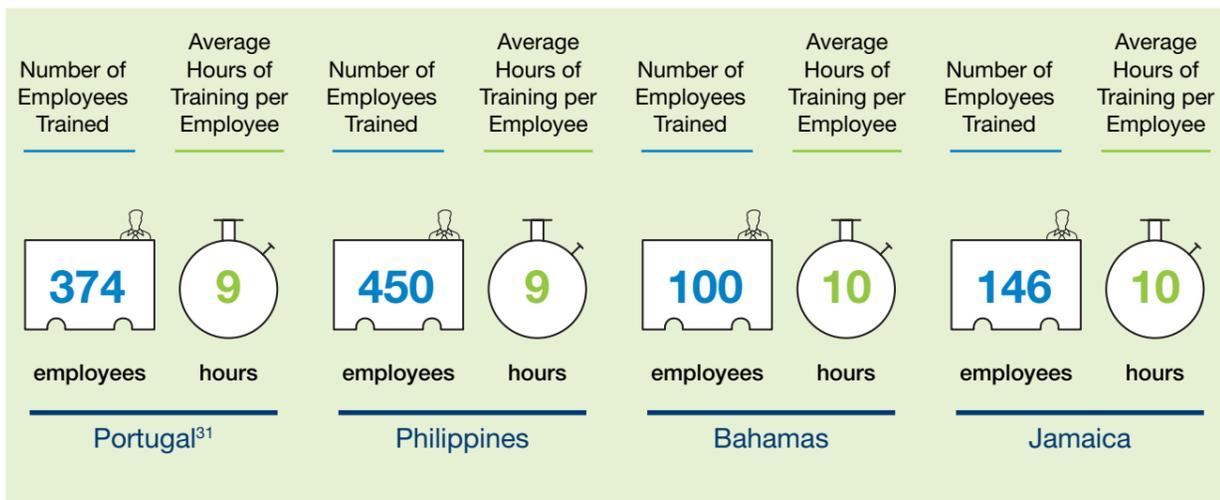
### Sample of Training Courses for Utility Employees

Name of Course	Topic of Training	Certification
NRW for Utility Managers	NRW	No
Water Balance and Performance Indicators	NRW	No
Short Course on Basic Network Hydraulics	NRW	No
Meter Installation	Technical Knowledge	Yes
Meter Testing and Validation	Technical Knowledge	Yes
Commercial Loss Reduction	NRW	Yes
Leak Detection	Technical Knowledge	No
Leak Repair and Reinstatement	Technical Knowledge	Yes
Pressure Zone/DMA Operational and Maintenance	Technical Knowledge	Yes
GIS and Asset Management	Technical Knowledge	Yes
Netbase – Basic Level	Technology Solution	No
Netbase – Expert Level	Technology Solution	No
Principles of Asset Management (Relevant for Network and Procurement Managers)	NRW	No
NRW Planning and Supervision	NRW	Yes

The following table presents either the number of utility employees that were trained or the average hours of training per employee for the local utility.



### Number of Employees or Average Hours of Training per Employee



<sup>31</sup> As Indaqua is the local water concessions operator, the data refers to trainings for Indaqua's own employees in 2016-2017.

# OUR ENGAGEMENT WITH LOCAL COMMUNITIES

Engaging in a dialogue with our stakeholders is an integral part of the solutions we offer, as in many cases we provide our services to help address local societal and economic challenges.



As a result, in cases where we have long-standing contracts with our clients, our company strives to establish local offices that not only hire individuals from the local community, but also engage community members through educational programs on responsible resource management. All of these activities are carried out based on detailed conversations with our stakeholders, which help us to better understand that challenges within a particular project or community.

Enabling access to an abundance of fresh water resources by local communities is the ultimate goal of our business, which we achieve by encouraging the sustainable management and use of water resources, while working to improve access to potable water. With projects in countries where access to and management of fresh water resources are critical to the level of development and economic prosperity, working together with local communities to ensure that they are growing sustainability is a key material issue for Miya.

In doing so, we seek to transfer our commitment to sustainability and social responsibility to our clients, and to help each water utility strengthen its relationship with the community, reflecting a positive image and a strong commitment to its customers. We believe that being socially responsible strengthens the position of the utility and the community it serves by:

- Answering the public need for consistent and efficient water supply at optimal pressure;
- Maximizing customer potential and the number of connected residents;
- Increasing positive public opinion for the utility and forging a sense of commitment;
- Creating a strategic partnership between the utility and its customers.

In all of our social activities, we aim to create positive and lasting value to ensure our part in ending global water scarcity.



## EDUCATIONAL PROGRAMS: RAISING AWARENESS ABOUT WATER USE AND CONSERVATION

In order to create lasting change in the use of water resources in the communities where we work, we engage with the local education system – in partnership with our utility client – to deliver our tailored curriculum and workshops on water scarcity and sustainability. We assist in preparing and delivering such educational programs as a volunteer service to school-aged children, from kindergarten to high school.

Many of the educational programs include a "hands-

on" element, in which the children are given an opportunity to install new pipes or faucets in their bathrooms and classrooms and to measure the impact of these activities on their water use over time. By showing them real results, our goal is that they will take this important knowledge home with them and share it with their families and friends, creating lasting change for the future of water in the countries and communities.

### Our Community Awareness and Education Programs



## BAHAMAS

As an island nation, the Bahamas faces a number of water scarcity challenges, namely a lack of access to readily available freshwater resources. Therefore, raising awareness in the local community, and particularly among children, is an important aspect of ensuring that the country has enough resources to adequately develop and serve the basic needs of its population.

In the capital city of Nassau, we donated a water education pilot program to the Oakes Field Primary School. The program began with a pilot with a 5th grade class in which students were instructed on topics including: The history and uses of water, the difference between water efficiency and water conservation, how water audits are conducted, where

drinking water comes from, the municipal water cycle, reverse osmosis, and rainwater harvesting. Students were also taught how to conduct a meter reading to raise awareness of their use of water in the home. In addition, we worked with children to install water efficient toilets and sinks for use in the school, and the students were asked to measure the success and water savings. Overall, through educational efforts and by replacing the sinks and toilets, the school's water consumption decreased by 20 percent. At the end of the course, students were asked to express their thoughts on water efficiency and what they had learned, presenting their discoveries and conclusions in an event attended by the local water utility's management team and Bahamian government officials.



## BRAZIL

Little knowledge on the importance of water conservation is provided to Brazilian schoolchildren, which indirectly has contributed to a common practice of wasting water. In addition, the population has little to no faith in the water utilities due to aging infrastructure and a sprawling population of over 207 million residents, creating serious infrastructural and customer service challenges.

From August 2008 to December 2009, BBL Engenharia worked with SABESP to construct an educational program to significantly reduce long-term water consumption in 671 public schools in the São Paulo Metropolitan Area. The project targeted both short-term and long-term usage through different methods: water reduction in the short-term was encouraged through targeted infrastructure changes such as installing low consumption toilets, automatic taps, detecting and repairing leaks in the pipes and

performing general infrastructure maintenance. Long-term savings were achieved by conducting water awareness and water conservation campaigns in the schools and by implementing a training program for students and staff. Teachers and school supervisors were provided with information on water conservation techniques and associated environmental issues to be presented to the students in the classrooms. Students were instructed on water usage and conservation, responsible best practices and good habits when using water.

As a result of the project, water consumption in the school districts decreased by 30 percent within six months of the completion of the project, with the original goal being a 10 percent reduction. On average, 123.5 million liters of water were saved each month throughout the project. On average, 68,700 m<sup>3</sup> were saved per month.



Original standard taps



Replaced taps with automatic shut-off function  
Tap replacement in local school in São Paulo



Similar to the Bahamas, Jamaica faces many of the same challenges with regards to fresh water scarcity, but these challenges are only exacerbated by a much larger and highly impoverished population. In addition, the national water utility has experienced NRW rates of well above 50 percent in recent years, resulting in unreliable and inconsistent service that has tainted the company's public reputation. As a result, Miya has worked closely with the utility to implement drastic efficiency and water system management targets, paired with a variety of opportunities for local community engagement, including educational programs in local schools.

Miya Jamaica and the national utility led and organized an education programs at the Maisie Green Basic School and the Little Angels Early Childhood Center in Kingston - schools for early childhood education located in socio-economically challenged neighborhoods. Miya and the utility's employees volunteered their time by fixing toilets and plumbing facilities, painting and improving playgrounds and recreational areas, and installing water saving and efficiency infrastructure to help the schools cut their operational costs and educate the children on the sustainable management of water resources.



Our subsidiary Indaqua has acted as a steward for environmental education for years in a country that suffers from drought and other freshwater challenges, despite its location in the heart of the developed world. Over 8,000 local students have taken part in Indaqua's environmental education programs.

In 2010, Indaqua was awarded the "Dr. Francisco Fonseca Henriques" prize for its environmental education campaign relating to clean water and its benefits for primary school children.

<sup>29</sup> <http://indaqua.pt/en/news/indaqua-awarded-campaign-for-environmental-education-award-dr-francisco-da-fonseca-henriques2010/>

In 2016, the company began the "Indaqua Environmental Education Program" in schools located in the municipalities where the company provides its water and wastewater concessions services. The purpose of the Environmental Education Program is to increase children's awareness on the importance of preserving water resources through interactive games and a fun, educational environment. The company presented its educational program at "Perlim", the largest Christmas-themed park in the country located in Santa Maria da Feira, where it provided a sensory experience for young children to learn about the different characteristics and states of water. Through its programs, Indaqua was able to reach over 100,000 children of all ages and share the company's message of a sustainable future for water resources.



Through Vista Water, Indaqua works with members of the local community in Angola to empower local communities to become more aware of their use of water resources. In addition, through the educational programs on water conservation and smart water resource management, Indaqua hopes that the local communities will become more independent and educate their friends and family on the impact that water conservation can have on their daily lives.



**CASE STUDY**

**Social Impact Assessments**

NWC, Jamaica

In the course of its engagement with the National Water Commission (NWC) in Jamaica, it became clear that there were key social challenges that needed to be addressed to enable the utility to reduce its level of commercial losses. Investigations by Miya's experts and relevant NWC teams found that the source of the utility's water losses was the result of technical and non-technical issues, namely: unmetered supplies with no contracts assigned, unmetered supplies with contracts assigned, leaks in distribution service lines, leaks within households with unmetered supply and the theft of water.

Therefore, since the project began in 2015, Miya has worked with NWC to address access to water and service issues in violent or instability-prone geographic areas in the Kingston and Saint Andrews areas. These areas, previously defined by NWC as "Red Zones", referencing high water losses, difficult access and sporadic to frequent violence, have been defined by Miya and the utility as "socially" challenged areas'(SCAs).



**The definition of SCA is based on two aspects:**

1. If Miya or the utility has to take any special precautions (such as liaising with community leaders, local politicians, recruiting local helpers, arranging police presence, meter banking, etc.) before undertaking the activities, the area should be considered a SCA.
2. If Miya or the utility has to undertake leak detection and repair work, disconnect illegal connections and install meters for customers in the community without any special measures, these communities will not be considered SCAs.

Indeed, one of the biggest challenges in the SCAs is gaining residents' trust enough to make them official customers. Therefore, the two entities are working together to take special precautions and engage with community leaders and/or local politicians to ensure that they have a social license to operate before undertaking any activities or making any significant changes to the system. Their goals are to improve revenue collection in these areas by converting unauthorized/illegal customers into regular NWC customers, minimizing illegal connections and metering those customers, where possible. In addition, the joint project hopes to reduce physical losses by enabling leak detection and repair work on the distribution systems in these areas, and to generate communal cohesiveness and support for the water utility's activities moving forward.



## VOLUNTEERING AND COMMUNITY PROJECTS

As an Arison Investments' company, Miya and our subsidiaries have participated in the international day of volunteering and giving back, Good Deeds Day. Good Deeds Day was initiated by Arison Investments' founder Ms. Shari Arison as an annual international day dedicated to committing good deeds and volunteering in the community. Since the first Good Deeds Day was held in Israel in 2007, the global initiative has garnered support from nearly one million participants across the globe in over 61 countries and in 38 states. Good Deeds Day offers its participants a

wide range of activities and opportunities to give back to their local communities in ways that benefit society and the environment. The day highlights the idea that a good deed can be big or small, but that all good deeds and positive actions make a difference.

Miya has been an active participant in Good Deeds Day since the company's establishment, and we have spread this positive tradition to our subsidiary companies across the globe.



2017 was the first time that Indaqua participated in Good Deeds Day (Dia das Boas Ações). In June 2017, a great fire swept across Pedrógão Grand, a municipality in the district of Leiria in Central Portugal. This fire is considered Portugal's largest ever fire, and the most devastating in the country's history. Employees from Indaqua immediately responded by joining the rescue efforts. They sent the municipality 500 kilograms of clothing, blankets, and medical equipment to help those in need due to the fire.



On Good Deeds Day 2014, employees from WSC and Miya Bahamas worked together to perform repairs, upgrades and general upkeep on the Elizabeth Estates Children's Home. The Children's Home was established by the Government of the Bahamas in 1992 and functions as one of the islands' major orphanages. Miya Bahamas' employees contributed by painting buildings, cleaning and repairing windows, fixing up the gardens and installing new toilets and faucets. In addition, new plumbing fixtures were installed to conserve water and improve the efficiency of water systems used at the Children's Home. The teams also delivered educational programs emphasizing the importance of water conservation, performing leak detection demonstrations and teaching how to repair leaks. Even Arison Group founder and Good Deeds Day initiator Ms. Shari Arison took part in the activities that involved 28 volunteers from Miya and a total of eight hours of work. The activities had a positive effect on the over 300 children living at the orphanage.



Miya's employees in the Philippines took part in Good Deeds Day, together with over forty employees from the local water utility – SUBIC WATER – and about 50 Aeta people, the indigenous population from the island of Luzon. The Aeta people live in scattered, isolated parts of Luzon and are thought to be some of the earliest inhabitants of the island archipelago. With the Aeta population declining due to development, as well as other socio-economic strains that are placed on their population, Miya and SUBIC WATER's employees believed that it was important to engage this local community and show their support for their way of life. Therefore, in the context of Good Deeds Day, Miya and SUBIC WATER hosted a number of educational seminars on topics like survival skills and organic farming and the use of natural vermifertilizer, including a talk from a representative from the Department of Agriculture. In addition, employees hosted games for the local children and adults to encourage a sense of bonding between the participants.



Our employees in Brazil took part in Good Deeds Day by delivering donations of milk and other goods to the CIAM Multidisciplinary Support Center in the Jaguaré district of São Paulo. The Center for Multidisciplinary Support (CIAM) is a local charity and non-profit organization founded in 1959 that provides assistance to children with special needs and their families, seeking to develop their trust, autonomy and inclusion in society.



Chapter 5:

# OUR PROJECTS & ACTIVITIES: A GLOBAL OVERVIEW



52%

IT IS ANTICIPATED THAT  
WATER STRESS WILL  
AFFECT 52% OF THE  
WORLD'S POPULATION  
BY 2050.

# BACKGROUND ON MIYA'S PROJECTS AND OPERATIONS

As experts in water efficiency projects and water operations, Miya's services are required all over the world, wherever there is need to improve management of water resources. As a result, Miya has acted as a contractor, consultant, and operator on hundreds of global water efficiency projects and water management and operations contracts.

Everywhere we work, we seek to create a positive impact on the use of water resources, working directly with major international water utilities. Miya's project (through its subsidiary BBL Engenharia) with SABESP impacted water access for over 27.9 million residents in the São Paulo area in Brazil. In Jamaica, Miya was contracted by the National Water Commission (NWC) for a five-year performance-based project in Kingston and Saint Andrew to maximize water efficiency for a population of more than 600,000 people. In the Philippines, Miya's water efficiency and NRW reduction project provided water access for an additional 2.5

million people in the western part of the metropolitan of Manila. And in the Bahamas, Miya is successfully implementing a ten-year NRW Reduction Contract for the purpose of significantly reducing water losses. In addition, and through our recently acquired subsidiary Indaqua, we are improving the water efficiency performance for one of Portugal's largest providers of water concessions services.

In the following section, we present a general overview of our key projects and the levels of water and management efficiency improvements that were achieved.



## Philippines – Providing an Additional 2.5 Million People with Access to Water



### The Challenge

Maynilad Water Services Inc. (Maynilad) is a water and wastewater services provider for the 17 cities and municipalities that comprise the West Zone of Manila's metropolitan area – an area that is home to over nine million residents. Manila is one of the world's most densely populated cities with 42,857 residents per square kilometer, and the city's 130-year-old infrastructure for water provision struggles to supply potable water to residents. Before Miya initiated its project, nearly three million residents lacked a connection to the municipal water system and millions more suffered intermittent supply or very low water pressure.



### The Solution

From 2009 to 2014, Miya implemented a comprehensive NRW management program, or water audit, which included applying management methodologies and NRW strategies to reduce both commercial and physical losses.<sup>32</sup> While the majority of Maynilad's NRW was due to physical losses from issues like leaky pipes - the infrastructure in the city dates back over a century - the water utility also suffered significant commercial losses due to illegal connections and errors in meter readings. To confront the latter, Miya assisted Maynilad with its meter management, which included helping the water utility select, install, calibrate and maintain meters, to reduce commercial losses. To address the challenge of leaky pipes, Miya was District Metered Areas (DMAs) in which it later on deployed leak detection units and teams to carry out active leak detection activities and installed a large-scale water pressure management program and NRW water management software to help detect leaks and provide effective service to Maynilad's customers.



### The Results

- NRW reduced from 1,533 MLD (64 percent of the water resources) in 2008 to 650 MLD (34 percent of the water resources) in 2014;
- Over 2.5 million additional people (433 thousand customers) were connected to the water distribution system;
- 24/7 water service increased from 65 percent of the population to 99 percent of the population.

<sup>32</sup> International Water Association (IWA) and the American Water Works Association (AWWA) methodologies.

## Bahamas – Finding a Solution for Freshwater Scarcity



### The Challenge

The Water and Sewerage Corporation of the Bahamas (WSC) is a government-owned water utility that manages, maintains, distributes and develops the country's water resources. It supplies drinking water, inter alia, to 250,000 residents of New Providence, the most populous island that is home to more than 70 percent of the country's total population and the capital city Nassau, which is also the country's commercial hub. Since WSC became a government-owned and operated company in 1976, it had limited success in controlling levels of NRW, and as nearly 90 percent of the island's water supply comes from costly desalination plants.



### The Solution

In 2012, WSC and Miya signed a ten-year \$83 million contract to reduce water losses in New Providence by over 10 billion gallons in the contract period, marking the utility's commitment to a comprehensive long-term solution to maximizing the efficiency of its water delivery systems and reducing the amount of NRW. In order to achieve this, the goals of the project were to sustainably reduce potable water leakage and build better customer support through the training of engineers and employees, and the education of local communities. The project includes both strategic and financial planning based on local NRW audits, followed by water infrastructure improvements suited to the specific needs and accessible resources on the island. The infrastructure improvements include: water pressure control, the establishment of district metering areas (DMA), locating and repairing leaks or deficient and defunct pipes, and application of advanced water data collection and system management solutions.

Training WSCs' employees and engineers to effectively control the loss of NRW is a critical part of the project, and Miya has established a local subsidiary to oversee the educational program and

creation of new employment opportunities locally. In addition, Miya is committed to working with the local community to increase awareness of the scarcity of water resources, initiating water efficiency education programs in local schools to ensure the efficacy of the project even after the ten-year project is completed.



### The Results

- 24/7 service for customers achieved in 2013;
- NRW reduced from 6.87 million imperial gallons per day (MIGD) in 2012 to 2.5 MIGD in 2017 - a 64 percent decrease in the level of NRW in the system while allowing billed consumption to increase by almost 50 percent in the same period;
- Significant reductions in energy expenditure and greenhouse gas emissions.

## Jamaica – Improving Service and Acting as a Liaison with Local Communities



### The Challenge

The National Water Commission (NWC) provides 190 million gallons of potable water each day to more than 400,000 households, accounting for about 2 million people in Jamaica and making it the country's largest water supplier. NWC is also the purveyor of sewerage services, including the collection, treatment and disposal of wastewater. Yet, as the country industrializes and grows, and more residential communities are established, the demand for potable water is rapidly increasing.

Despite the significant role that NWC plays in the lives of Jamaicans, water loss for the utility before the project (2015) was estimated at 53 percent of the water produced in the Kingston and Saint Andrew metropolitan area, resulting in a significant losses in revenue. In addition, NWC has joined the Transition Program, tied to the vision of becoming the top water



services utility in the Caribbean and Latin America by 2020, with a mission of seeking to positively contribute to national development by providing high quality potable water and sewerage services to its customers.



### The Solution

In order to address these challenges, the water utility entered into a five-year co-management partnership agreement to maximize the efficiency of NWC's Kingston and Saint Andrews' water systems, which includes a population of over 600,000 people in the country's capital city. The focus of the project is on NRW reduction and capacity building of NWC personnel, utilizing a unique co-management approach. Targets were set to reduce the volume of NRW in the area from 117 MLD (58 percent of water input) in the baseline period (2015-2016) to around 49 MLD in the last year of the project (ending in September 2020).

One of the cornerstones of the joint project between Miya and NWC is the training program for NWC's employees and engineers to improve the utility's service and NRW reduction rate. With over 300 attendees in 13 courses on topics such as NRW management, meter installation and validation, leak detection and repair and GIS and asset management, attendees were provided with unique opportunities to better understand the project and its inherent business value.



### The Results

- Comprehensive training of NWCs personnel was completed including a revision to many of its Standard Operating Procedures (SOPs);
- The average supply time increased from 19 hours per day at the beginning of the project to 23 hours per day, with a goal of achieving 24/7 service by the end of the project;
- Improved network infrastructure due to better GIS data, replacement of hundreds of system valves and isolated repairs;
- Significant reduction of water losses was achieved in the pressure zones the company established during 2017, with the aim of completing zoning and gaining full control over the system by 2018.

<sup>32</sup> WSC Historical Timeline

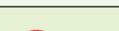
## Indaqua: Improving the Efficiency Performance of Portugal's Leading Private Operator of Water Concessions

As mentioned, Indaqua is the largest private operator of water concessions in Portugal, with operations in six municipal concessions and one private-public partnership (PPP). As of 2017, the company held a 31 percent market share in the private market for retail water supply, making it one of the most significant players in the space. The concessions agreements range between 25-50 years, extend across a network of more than 4,000 kilometers, thus serving a customer base of more than 250,000 clients as of December 2017. However, Portugal is undergoing a period of population growth in a number of key areas that Indaqua has traditionally served, paired with an increased demand for water concessions and efficiency services in the country. As a result, Miya has assisted Indaqua in expanding and growing its offering for its municipal water clients, while working to improve the company's financial turnover and overall economic benefits from each of the concessions projects.



The following details the relevant water concessions in Portugal for 2017, including details on the reduction of NRW in the various systems and total water and wastewater invoiced in each of the concessions.

 Water Supply  Waste Water

Name	Duration	Term	Scope	NRW at Start of Concession	Current NRW	Water Clients	Water Invoiced (m <sup>3</sup> )
<b>Fafe</b>	25 Years	2021		50.0%	17.4%	17,646	1,548,743
<b>Santo Tirso/Trofa</b>	35 Years	2034		30.0%	10.4%	30,005	2,451,304
<b>Feira</b>	50 Years	2049		46.5%	19.6%	50,094	3,823,296
<b>Matosinhos</b>	25 Years	2033		25.0%	16.1%	87,250	10,563,937
<b>Vila do Conde</b>	40 Years	2048		37.0%	12.9%	35,792	3,576,463
<b>Oliveira de Azeméis</b>	30 Years	2044		50.0%	21.0%	17,001	1,781,906
<b>Águas de São João</b>	-	-		-	23.0%	12,227	1,322,259
<b>Concessions' Subtotal</b>					<b>16.2%</b>	<b>250,015</b>	<b>25,067,909</b>



Chapter 6:

# GRI CONTENT INDEX



# GRI CONTENT INDEX

GRI-SRS Indicator	Description	GRI Reporting Option	Page number or Omission
<b>GRI 102: General Disclosures 2016<sup>33</sup></b>			
102-1	Name of the organization	CORE	10
102-2	Activities, brands, products and services	CORE	16, 38-44
102-3	Location of headquarters	CORE	18
102-4	Location of operations	CORE	19
102-5	Ownership and legal form	CORE	16,18
102-6	Markets served	CORE	19
102-7	Scale of the organization	CORE	24,27
102-8	Information on employees and other workers	CORE	27
102-9	Supply chain	CORE	30
102-10	Significant changes to the organization and its supply chain	CORE	N/A for first report
102-11	Precautionary principle or approach	CORE	24
102-12	External initiatives	CORE	13,25
102-13	Membership of associations	CORE	25
<b>STRATEGY</b>			
102-14	Statement from senior decision-maker	CORE	8-9
<b>Ethics &amp; Integrity</b>			
102-16	Values, principles, standards and norms of behavior	CORE	23
<b>Governance</b>			
102-18	Governance structure	CORE	20-21
<b>Stakeholder Engagement</b>			
102-40	List of stakeholder groups	CORE	11
102-41	Collective bargaining agreements	CORE	28
102-42	Identifying and selecting stakeholders	CORE	11
102-43	Approach to stakeholder engagement	CORE	11
102-44	Key topics and concerns raised	CORE	12
<b>Reporting Practice</b>			
102-45	Entities included in the consolidated financial statements	CORE	10
102-46	Defining report content and topic Boundaries	CORE	10
102-47	List of material topics	CORE	13
102-48	Restatements of information	CORE	N/A for first report

<sup>33</sup> GRI SRS, 2016

# GRI CONTENT INDEX

GRI-SRS Indicator	Description	GRI Reporting Option	Page number or Omission
102-49	Changes in reporting	CORE	N/A for first report
102-50	Reporting period	CORE	10
102-51	Date of most recent report	CORE	N/A for first report
102-52	Reporting cycle	CORE	10
102-53	Contact person for questions regarding the report	CORE	10
102-54	Claims of reporting in accordance with the GRI Standards	CORE	10
102-55	GRI content index	CORE	74-77
<b>MATERIAL TOPICS</b>			
<b>GRI 201: Economic Performance</b>			
103: Management Approach	103-1 Explanation of the material topic and its Boundaries	CORE	24
	103-2 The management approach and its components		
	103-3 Evaluation of the management approach		
201-4	Financial assistance received from government	CORE	25
<b>GRI 203: Indirect Economic Impacts</b>			
103: Management Approach	103-1 Explanation of the material topic and its Boundaries	CORE	48-49
	103-2 The management approach and its components		
	103-3 Evaluation of the management approach		
203-2	Significant indirect economic impacts	CORE	50
<b>GRI 205: Anti-Corruption</b>			
103: Management Approach	103-1 Explanation of the material topic and its Boundaries	CORE	22
	103-2 The management approach and its components		
	103-3 Evaluation of the management approach		
205-1	Operations assessed for risks related to corruption	CORE	22
<b>GRI 303: Water and Effluents<sup>34</sup></b>			
103: Management Approach	103-1 Explanation of the material topic and its Boundaries	CORE	38-44
	103-2 The management approach and its components		
	103-3 Evaluation of the management approach		
301-1	Interaction with water as a shared resource	CORE	43-44
301-2	Management of water discharge-related impacts		

<sup>34</sup> The indicator was revised in 2018, and therefore the most relevant Water & Effluents indicator is presented.

# GRI CONTENT INDEX

GRI-SRS Indicator	Description	GRI Reporting Option	Page number or Omission
<b>GRI 305: Emissions</b>			
103: Management Approach	103-1 Explanation of the material topic and its Boundaries	CORE	45
	103-2 The management approach and its components		
	103-3 Evaluation of the management approach		
305-5	Reduction of GHG emissions	CORE	45
<b>GRI 401: Employment</b>			
103: Management Approach	103-1 Explanation of the material topic and its Boundaries	CORE	26-27
	103-2 The management approach and its components		
	103-3 Evaluation of the management approach		
401-1	New employee hires and employee turnover	CORE	28
<b>GRI 403: Occupational Health and Safety</b>			
103: Management Approach	103-1 Explanation of the material topic and its Boundaries	CORE	30
	103-2 The management approach and its components		
	103-3 Evaluation of the management approach		
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	CORE	31
<b>GRI 404: Training and Education</b>			
103: Management Approach	103-1 Explanation of the material topic and its Boundaries	CORE	53
	103-2 The management approach and its components		
	103-3 Evaluation of the management approach		
404-1	Average hours of training per year per employee	CORE	54
404-2	Programs for upgrading employee skills and transition assistance programs		54
<b>GRI 413: Local Communities</b>			
103: Management Approach	103-1 Explanation of the material topic and its Boundaries	CORE	55
	103-2 The management approach and its components		
	103-3 Evaluation of the management approach		
413-1	Operations with local community engagement, impact assessments, and development programs	CORE	29, 56-63





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