AquaFed

THE INTERNATIONAL FEDERATION OF
PRIVATE WATER OPERATORS

Water & Jobs

PRIVATE OPERATORS: EMPLOYERS AND JOB CREATORS

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1. INTRODUCTION

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Employment has obvious benefits for the general economy, businesses and individuals. For individuals, it provides income, helps them remain socially connected, lead self-fulfilled lives, and develop expertise and specific skills. Job security, wages, and benefits are all aspects of employment quality. Ensuring decent employment by creating more, better and sustainable jobs is a challenge for governments and for the private sector. Governments seek full employment for their people. Business needs good quality staff to ensure the efficiency and effectiveness of their operations. From a broader perspective, employment has a ripple effect on the local, national and global economies, and has impacts on society and the environment. Water operators make an important contribution to all these objectives.

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While employment in general has impacts on local, national, and global economies, in the water sector, this is particularly true. The private water operators' sector has direct and indirect effects in creating jobs by providing services for people and business, by enabling people to gain education and employment, protecting and guaranteeing public health and environmental quality.

To grow their activities, to create incentives, to formalize business, to stimulate economic growth and raise living standards, water operators must innovate, generate employment and invest in human resources over the long term.

This report looks at how two elements converge: employment within the water sector (jobs for water) and the broader impacts of successful water management on employment (water for jobs). It examines the subject of water and jobs from three different but interrelated perspectives:

- The role of private operators in providing direct employment of people is dealt with in section 3;
- The role of indirect employment of people through the role of subcontractors and suppliers to private operators is covered in section 4; and
- The role of water and wastewater services in stimulating local economies and enabling others to create jobs is discussed in section 5.

This report identifies and explains with examples the roles that private water operators play in water and formal employment. Specifically, it looks at human resources development, the impact on employment in directly linked economic activities, and at the indirect effects on the region that the private operator is active in.

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2. THE CONTEXT OF PRIVATE WATER OPERATIONS

2.1 Public Authorities and Private Operators

The core business of private water operators is to work with public policy-makers, public authorities and local governments to assist these organisations in meeting their objectives and obligations for water supply and wastewater services. Private operators are "tools" that the public authorities can use to provide technical, financial, operational and management support in the day-to-day planning and operation of these essential services.

To do their work, private operators need to provide, develop and use assets of different kinds: technology, know-how, financial, physical and human. Human assets – people – enable all other assets to play their proper role. Mobilising, motivating and developing people at all levels is therefore a key success factor for all private operators.

In the vast majority of cases, private operators deliver all or part of the service under a contract with a public authority. These contracts are usually established by a public tender and they provide the objectives, process and control by the public authority (policy and administration) over the (industrial) activity that it requires to be carried out by the operator.

These kinds of contracts have been defined as a contractual arrangement between a private sector entity and a public authority. It enables their sharing of resources such as skills and assets to deliver a service or operate a facility. In addition, it also enables sharing of risks and rewards potential.[1]

2.2 Change Management and Leadership

Central in the private operators' work is that every contract involves change management. This usually involves organisational change and the introduction of different work practices. In making these changes, operators have to introduce new skills, change attitudes and overcome cultural gaps. It is vital for private operators to maintain the trust and confidence of both the workforce and stakeholders.

A key to success is the leadership that is required throughout each phase of the contract. This takes the form of political leadership on the public side and industrial leadership on the private side. The details of leadership change in response to the different phases of a project and contract. They need to adapt to both foreseeable and unforeseeable circumstances.

From the perspective of the theme "water and jobs," political and industrial leadership come into play in different ways at different times. This corresponds with the main phases in the life cycle of a contract: pre-contract, handover, start-up, operation and conclusion.

Private water operators are often called upon by public authorities because the performance of public water and sanitation services is not up to the standards they require. One of the common causes of the situation lies in the staffing of the operation. Over time, neglect of human resource management may have led to poor motivation, low levels of appropriate skills and overstaffing. The result is often low quality and unrewarding jobs, leading to poor motivation and low job satisfaction, which in turn result in poor or failed service delivery Correcting the situation presents a very sensitive and critical challenge for all involved: public authorities, private operator, staff and workers and trade unions. Many staff and workers can be retrained and redeployed, but for some this may not be possible and alternatives will have to be found. Trust is key in the success of this change. This is a vital role in the change management that a private operator is often engaged to put into effect.

1- The National Council for Public Private Partnerships.

2.3 Employment in the Life Cycle of a PPP Contract

There is a degree of overlap between the start-up and the operational phases of a public-private partnership (PPP) as it pertains to managing human resources. Once the initial transfer of staff has been accomplished, the focus must change to increasing the operation's efficiency. This requires the transfer of new technologies and skills, which in turn requires further training of staff and local management. This is termed the transfer of "know-how" – that is, knowing what to do and how to do it. As this progresses, it becomes increasingly important to transfer "know-why" skills to enable the operations to, in turn, become increasingly effective, efficient and autonomous.

In the pre-contract phase, political leadership is focused on acquiring the best skills to ensure that the water supply or wastewater service will provide the social, economic and environmental benefits that its community aspires to. Creating and maintaining local employment is a prime consideration, with an internal focus on providing the best combination of skills, technology and management to enable this vision to be realised.

In the contract hand-over phase, the operation's existing staff must transition smoothly from the public sector to the private sector. This requires close interaction between the former and new employers. This is also the case at the end of the contract when the transfer may occur in reverse.

Some forms of contract do not require the transfer of staff and employees from one organisation to another. In the case of some technical transfer or management contracts, additional technical staff are brought in by the private operator to work alongside the public operator's staff to transfer techniques and skills to them.

The start-up phase is a particularly critical one for the private operator. Here the impact of change management is significant, requiring leadership and motivation for all existing staff and workers who transfer from the former employer to the new one. It also requires the careful integration of new people that the operator might bring in from elsewhere, and respectful change management and skills assessment processes.

The examples later in this report show how operators participate in the change management process, in building trust, and the importance that they attach to training as a way to transfer know-how to their workforce.

2.4 Employment and skills development beyond the direct workforce

Expertise and skills development is not limited to the workers or related businesses. It is also extremely important that public authorities and those involved in contracts on the clients' side develop their skills to regulate and control the private operator, as well as to integrate different working methods and constraints into planning and related activities. Public authorities and private operators share a strong interest in ensuring that their counterparts possess the appropriate skills, know-how and know-why. Without this, communications between them are difficult and decisions may not be as successful as they could be.

While human resource management activities are underway with those employed directly by the operators, there are other stakeholder relationships that must be built and maintained. In particular, this relates to those who are important to operations, but who are not directly employed by them, such as subcontractors and suppliers. A number of the issues raised above must still be addressed with these stakeholders, if in slightly different ways. This forms the content of part four of this document.

High quality performance of water and sanitation services has a significant impact on the local community, including on its economy and jobs market. The last part of this document sheds some light on the correlation between the quality of water services and the strength of a local economy.

3. Water operators
AS DIRECT EMPLOYERS

© Adelaide

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To fulfil their commitments, engage in operations and ensure customer satisfaction, private water operators must invest in their employees. Performance of staff and employee satisfaction are ultimately the key elements of good services. This is achieved when employees master their jobs, can perform to the satisfaction of both customers and their supervisors, and can ascribe to individual professional goals.

The management of human assets includes a wide range of activities. These include strong leadership, clear organisations, active motivation, training, operational health and safety, career development opportunities, incentives and collective agreements.

By providing career development opportunities through training, capacity-building programmes, opportunities for career advancement and other incentives, private sector water companies are able to manage change successfully in terms of staff relations. The results include creation of decent jobs, payment of regular wages, low staff turnover, a more dedicated workforce, and better quality service and performance of the operator.

Private water operators need to evaluate the knowledge and skills of their staff and to foster and develop them while respecting each individual's career aspirations. This establishes a high motivation environment, which leads to high performance.

Having systems in place to invest in employees helps companies provide positive motivation in a private sector environment and aims to strengthen equality and avoid discrimination.

A central aim of the change management process is to ensure that all staff have the chance to adapt to the new company structure, culture, and corporate policy, as well as to new work areas where different professional profiles are required.

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3.1 TRAINING

The aim of a training programme is to increase employees' technical and managerial skills. This allows employees to evolve their own capacity and therefore has a direct impact on staff's motivation and their acceptance of change.

Most contracts with public authorities clearly define training and transfer of knowledge, know-how and technology as objectives. This is to ensure that the benefits of a contract with a private operator can have a long-lasting effect on the service and the community, including after the conclusion of the contract.

Training benefits both the operator and the employee and requires investment in training time, human and financial resources.

Generally speaking, AquaFed's member companies invest 1% to 5% of their budgets in training programmes. Many companies have made great strides to improve the competencies and skills of their employees through innovative programmes. "Train-the-trainer" initiatives help to instil enduring cultures of quality and customer service. Training centres that are recognised and certified by public authorities expand training opportunities by supporting new and specialised profiles needed in the sector. Many private water operators have established partnerships with local officials or other companies around the world to design and implement effective programmes. The benefits therefore extend beyond the company in the contract and contribute to the educational establishment and teaching profession.

Following are some examples of best practice from water operators worldwide.

3.1.1 Training Centres and University Diplomas

The concept of permanent training centres is a functional concept. In Tangiers, Morocco, for instance, the centre run by the water operator Amendis has earned the right to award college diplomas through an agreement with local universities. For the water operator, being able to contribute to the educational system offers three benefits. Firstly, it helps raise the reputation of the water service provided by the operator. Secondly, it helps to raise awareness about water- and wastewater-related issues. Thirdly, it guarantees that the skills being offered match those that are required in practice. For individuals it ensures solid perspectives in the job market. Students are able to ensure their future viability on the job market, entering employment with a regular income and social benefits involving skills and personal career development possibilities.

When the Colombian city of Cartagena established Aguas de Cartagena (Acuacar) as a public-private partnership in 1995, taps flowed for just 14 hours a day on average. The new entity immediately launched an intensive programme of staff training. During the first decade, Acuacar focused on the development of basic skills among its operational staff. By 2000, the firm was providing 125 hours of training hours per year per person. Once it had graduated a critical mass of workers as "drinking water and basic sanitation technicians," the firm was able to reduce the volume of person-hours of instruction. At this point efforts could be focused on improving the productivity of managerial staff. Thanks to these and other advances, the citizens of Cartagena can now draw water from their taps 99% of the time.

In 2014, the Aguas de Cartagena training centre became certified by the Colombian Ministry of Education, which means that it has been officially recognised as formal training and educational entity.

3.1.2 Knowledge Transfer

In Benin, an association of private operators has been working with the Water and Sanitation Programme (WSP), a multi-donor partnership under the auspices of the World Bank, to provide training and facilitate knowledge transfers.

The Association des Fermiers du Benin (AFEB) was founded in 2011 to unite private firms that provide water services. By 2015 it had 24 members, accounting for nearly one-third of Benin's private water operators.

On the training front, efforts to prepare local companies for new responsibilities came first. AFEB worked with WSP to develop a curriculum that would be implemented by three organisations: Hydroconseil from France, CePEPE from Benin, and Diversity Management Consulting from Cameroon. An operational management course was designed to improve performance in areas such as water loss and maintenance. A business management track focused on skills in accounting, marketing, financial planning, and project development. A leadership module was designed with the help of the World Bank's private sector arm, the International Finance Corporation. Two ten-day sessions were held in the cities of Parakou and Cotonou in 2013. Some 75 individuals from 50 operators received training.

The Riyadh-based National Water Company in Saudi Arabia wanted to change its corporate culture. Starting in 2008, for the next six years it worked with the French-based Veolia to implement a training programme for current employees, along with an improved orientation programme for new hires. Some 4,500 employees, about 1% of the total company workforce, received training at a rate of just 1% of total human resources outlays. Participants in the programme received orientation in customer service management, health and safety, change management, information technology (IT) and other technical and soft skills.

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3.1.3 Training for Competitive Advantage

The Brazilian water operator Companhia de Águas do Brasil (CAB) views employee training as a competitive advantage. In 2014, it invested in an average of 10.5 hours per employee, up by 20% over the previous year. Programmes range from leadership workshops to instruction on technical and operational skills reaching out to improving all professional and existing educational levels. The company has established partnerships with several educational institutions, and has launched a "train the trainers" initiative. Its *Construindo o Saber* (Building Knowledge) programme offers elementary school education at the workplace. It is certified by the Ministry of Education, thereby allowing employees to continue their studies if they so choose.

3.1.4 Measuring and evaluating training and transfer of skills

The level of knowledge, know-how, skills and technical competency of any organisation, its management and labour force is very difficult to measure or assess. These things are however, crucial to the success of the operation and its outcomes. Training and transfer of know-how and know-why are often key objectives for a public authority when it enters into a contract with a private water operator.

Private operators continue to develop approaches that enable them to establish clearly defined objectives in their contracts with public authorities and partners and to present their performance in this largely intangible field in as concrete way as possible.

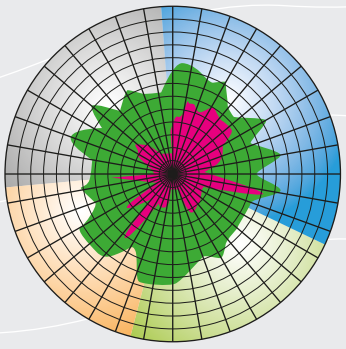
BOX 01. WIKTI™ - WATER INTERNATIONAL KNOWLEDGE TRANSFER INITIATIVE

The WIKTI™ is a purpose-designed process approach developed by Suez to the transfer of know-how, know-why and technical skills. It is based on a three-step approach to the essential components of water and sanitation service.

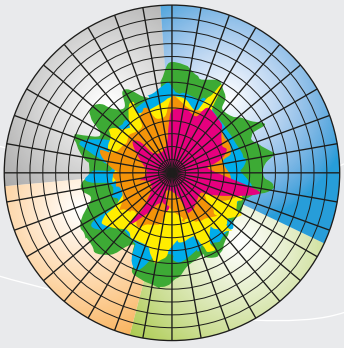
In step 1, a diagnosis of the levels of confidence of the staff engaged in each of the key business process areas is conducted jointly by the client and the operator. This is done using an "evaluation grid" specific to each process area. The results are plotted on a radar diagram. Target levels to be achieved within the contract are also defined and these are plotted on the same diagram.

Step 2 is the implementation stage. Dedicated "Know-How Officers" are allocated to each business process. They use a "Process Kit" to organise and implement the training programmes needed to meet the objectives.

Step 3 is the assessment stage. Regular periodic assessments using the evaluation grid are carried out and the results plotted on the radar diagram. This enables immediate visualisation of the evaluation of progress achieved against the targets to be made.



360° assessment



Starting Diagnosis
Target
Starting Diagnosis
Diagnosis year 2
Diagnosis year 3
Diagnosis year 4
Target

Source: Suez WIKTI.

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3.2 OCCUPATIONAL HEALTH AND SAFETY

Employees in many parts of the water and sanitation sector are exposed to a wide range of risks and dangers – physical, biological and psychosocial. They experience exposures directly related to the work itself, as well as the physical environment in which the work takes place.

Health outcomes vary from immediate to delayed, and from acute to chronic. Their activities can also involve the need to protect and prevent exposure of the general public to dangers. Protecting all workers, customers and the general public is therefore an essential role of all private operators. One of the key methods is education with the aim of increasing awareness and achieving behavioural change, following the principle that education is prevention.

Management therefore has a responsibility to ensure that working practices are inherently safe and are adhered to, that accident prevention procedures are in place and that all staff are trained to recognise and understand the risks and dangers that might be associated with their work. Health security risk analysis and assessment are intrinsic to successful management to define and combat hazards, risks and outcomes.

Some of the hazards and risks are akin to those in the construction industry, where employees work at height, in confined spaces, with heavy machinery and materials, with high pressure water and high voltage electricity. Others are akin to those in the chemical industry, where hazardous materials and gasses have to be manipulated, and the special dangers of laboratory work are paramount. Work in trenches and in sewers presents a range of special hazards, some of which are almost unique to the industry, such as the risks of some diseases that are associated with sewage and polluted waters. Staff are often exposed to traffic risk, both because their work requires them to drive on the roads, but also because they are working in roads and other transport systems where they can be hurt themselves and can also cause accidents to passing traffic and people.

Negligent actions of management or operators can also have serious health and related impacts on the people the services are designed to serve – for example, inappropriate chemical dosing to the water distributed or operations can allow pollution to enter a distribution system.

Guarding against this wide range of dangers is quite literally a vital part of the job of all the people engaged in the industry from the most senior to the most junior. It requires continuous processes of risk assessment and review, the design and implementation of working procedures, safety inspection, proper equipment and protection and training. Risk analysis associated with health and safety can help to mitigate and prevent hazards.

Water operators are legally bound to maintain the occupational health and safety standards stipulated by regulators in the jurisdictions where they operate. In many cases they implement certificated standards as defined by the International Organisation for Standardisation (ISO) – e.g. ISO 9001 on quality management, and ISO 14001 on environmental standards.

© Lydec

BOX 02. LYDEC – HUMAN RESOURCE POLICY

The Urban Community Council of Casablanca has selected Lydec, a subsidiary of Suez, to distribute electricity, drinking water and wastewater services in Casablanca and Mohammedia. The limits of public management and severe flooding incidents in December 1995 and January 1996 accelerated the concession award process by underlining the urgency of improving the city's wastewater and rainwater infrastructure.

The main objectives of Lydec human resource policy are to comply with Moroccan legislation, enhance the health and well-being of the employees, and decrease the social and economic cost of accidents and diseases. Lydec seeks to avoid any negative impact to the health of the workers because of their work by:

- determining fitness to work;
- proposing different arrangements to workstations, shifting employment according to the physical and mental abilities of the employees; and
- preventing professional risks, evaluating them and implementing medical examinations, to screen and study work conditions to eliminate the risks.

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3.2.1 Advances in Occupational Health and Safety

Private water operators around the world are taking concrete steps to reduce workplace-related health and safety hazards. These include the establishment of clear objectives to reduce accident rates, more on-site inspections, monitoring and reporting training, and investments in better and safer equipment.

Brazilian firms are governed by the national Programme for the Prevention of Environmental Risks (PPRA). With 18 operational contracts in five states, Companhia de Águas do Brasil (CAB) uses advanced analytic tools to constantly monitor the level of compliance with the PPRA. The firm runs in-house training programmes on occupational health and safety. At the start of each shift, employees also participate in a Daily Security Dialogue to review potential risks. CAB's various local Quality Systems Management Services units continuously exchange information about ways to ensure and improve occupational health and safety. Special procedures have been adopted for activities deemed to be of high risk, such as tasks performed at height or in confined spaces, along with those that involve electrical currents, excavations, and manipulations of chlorine gas containers.

Suez launched a programme in 2011 designed to cut workplace accidents by 30% within five years. It has also implemented a programme to ensure the prevention of fatal accidents by anyone touched by the firm's activities. These programmes and their targets are reviewed annually by the company's Ethics and Sustainable Development Committee. Top executives at all subsidiaries are required to draw up annual "safety contracts," and year-end executive bonuses are partially determined by safety records. Further down the line, managers and supervisors receive regular training on occupational health and safety issues. In 2013 the group disseminated "10 Rules that Save Lives" among its employees. The drive included an effort to elicit specific commitments from managers and other members of staff. Gradually, the firm has been drawing subcontractors into that programme. The impact of these efforts between 2012 and 2015 has been a reduction in the accident frequency rate from 13.32 to 10.05 and in the severity rate from 0.6 to 0.53.

Sociedad General de Aguas de Barcelona (AGBAR) launched its Smart Protection Project in 2012. It included the establishment of a prevention system, with improvements in technical and organisational operations; improved infrastructure for information sharing; and training designed to change attitudes and behaviour, notably among managers. As a result, the accident frequency rate decreased by about 50% for the 2012–2013 period.

Efforts to improve occupational health and safety are often accompanied by drives to obtain international certificates from the International Organisation for Standards and other respected agencies. The water operator in Casablanca, Morocco, has obtained two stamps of approval: ISO 9001 and OHSAS 18001, the latter a British standard that is applied internationally. More remarkably, Lydec reduced workplace accidents by 95% for the period covering 1998-2013. Lost time accidents were reduced by 45% year-on-year for 2012–2013.

Veolia has also attained OHSAS 18001 certification, along with ILO-OSH 2001, which confirms compliance with the International Labour Organisation's health and safety guidelines. Over one-third of training time is dedicated to such issues. As a result of these and other efforts, the company's injury frequency rate fell from 18.9 (per 1,000,000 employee-hours worked) in 2010 to 11.7 in 2014.


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3.3 CAREER DEVELOPMENT AND EMPLOYEES' PERSONAL DEVELOPMENT OPPORTUNITIES

As noted, private water operators are implementing a number of human resource and change management strategies as part of their employment approaches, including career development.

When a private water and wastewater operator assumes managerial responsibility for operation of a company, both the company and its employees must work within a change management situation. This means that the human resources department must dedicate additional efforts to managing staff, including career plan development, high potential management and job mobility. It aims to raise motivation among employees and also implement a new and sustainable corporate culture.

When a private operator is awarded a concession or enters into a contract for a public-private partnership, current employees are usually protected from layoffs by national law. While staffing may be bloated in objective terms, managers generally do not have the freedom to reduce the workforce. Instead they must work with the people they have, while improving recruitment policies to boost the level of new hires.

Generally private operators attempt to instil a new culture in the workplace. The tools they use are capacity-building, training, internal restructuring and reorganisation, and benefits packages that may include incentives for voluntary early retirement.

At the same time the employees from the previous water and/or wastewater service provider need to adapt to a new employer, new management, new work styles, new corporate culture, and often to new work areas and tools and technology.

All these activities require the investment of time and money, as well as demonstrated leadership and skill development from the new operator. Investing in existing human resources is essential to the implementation of efficient and effective services.

A dedicated workforce improves and implements effective and efficient service performance, while maintaining talent and knowledge in-house. This remains true even when the employee leaves. Providing support for employees in their individual career development empowers them to proceed with their professional career and to have greater opportunities.

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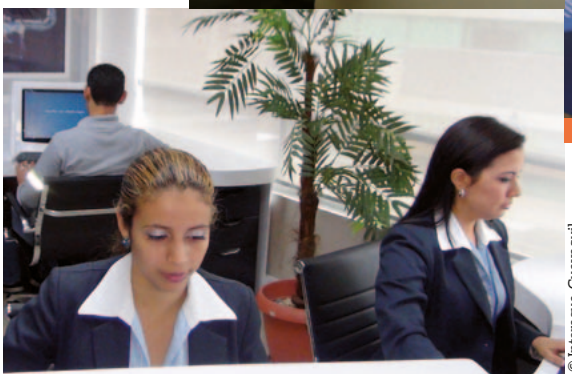

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3.4 HUMAN RESOURCE DEVELOPMENT

In general, human resources development is seen in relation to "the development, management, coordination, financing and remuneration of the human capital in a national workforce to achieve access, coverage and quality of water, sanitation and hygiene services.[2]

To effectively manage human resource development, operators must evaluate the strengths and weaknesses of each staff member to determine as quickly as possible their potential and how they might adapt to the new business needs.

Human resource development tools come in many forms. One of the most important is ensuring that employees have ample opportunities to pursue career opportunities within the firm, allowing them to move, develop and attain their professional goals. Companies help by making sure that promising employees are deployed in positions that enable them to make the best possible contributions to the larger organisation.

Tools also include encouraging a healthy work-life balance. Time away from work is important; employees need sufficient time off to take care of their personal needs and to enjoy family, leisure and recreational activities.

2- IWA (2013).

3.5 BENEFITS OF INDIVIDUAL CAREER DEVELOPMENT


© SEAAL

The level of job satisfaction for individual employees increases as they have opportunities to learn and therefore be "safer" in practice and more aware.

This enables them to develop their own professional profile and advanced skills, and move into positions that are increasingly challenging and rewarding.

In turn, the company benefits from a skilled and better trained workforce that is able to complete all necessary tasks. As a firm's reputation as an attractive place to work grows, it is able to attract the best recruits. The model reinforces itself as employees learn how to become more efficient and effective. In the end, the firm can count on a loyal and dedicated staff.

3.6 CREATING CAREER DEVELOPMENT OPPORTUNITIES


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To ensure employee retention, staff members must be offered opportunities for professional career development.

Employees must adapt to the challenges of a changing workplace culture, and companies need to identify and encourage the skills and talents of their workers. These actions are closely related to those described in the section on training above.

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3.6.1 Programmes for Young Employees and students

Specific programmes can include internships and apprenticeships for young people, to attract talented individuals, create loyalty and improve the firm's public image. For example, we like it based in Rostock, Germany, has implemented an award-winning professional education programme within the company and at the same time ensured high scientific involvement of young academics in the field of water and agricultural and environmental sciences at the local university.

Veolia, in the United Kingdom, has implemented a graduate programme for its graduate trainees. This two-year programme, which includes practical and academic studies based on country-wide rotational placements, helps trainees to boost their career and the company to create future highly skilled staff with deep knowledge about the company. In addition to the studies, the company provides support for each trainee to best develop his/her talents and interests.

BOX 03. SEAAL'S INTERNAL SURVEY – LISTENING TO EMPLOYEES

SEAAL has launched a biannual employee survey to hear their feedback and concerns. The survey's participation rate is very high, representing approximately 80% of staff.

In 2012–2013, the survey showed that most young employees under the age of 30 had the same concern, so a second survey focusing on young employees was launched. Results indicated that they wanted to be more involved in the life of the company. Since then, the Human Resources department invites young people to all internal and external events.

For instance, on the SEAAL stand at the national recruitment Congress, 10 to 15 young employees welcome participants and job seekers and talk about their experience and career in SEAAL.

The same is done at Polytech. The salon lasts four days, and each day is dedicated to one topic: one was about minorities, another about people with disabilities, and yet another about young people in the company.

3.7 INCENTIVES

Decent pay for decent jobs is the most fundamental form of incentive for workers and staff alike.

Formal employment with a private operator ensures these standards on a reliable basis. Bonus and other incentive systems can help to improve the quality of service by providing motivation for employees to become more efficient and effective. As workers share the rewards of their improved performance, their loyalty and integrity are often bolstered.

3.8 WORK-LIFE BALANCE

Employees who are satisfied with their family and social lives tend to be more productive on the job. A company respecting this need of its employees can be more attractive for specialised staff and provide sustainable employment. Further, in moments of change management the natural resistance of people to new work conditions and practices can be minimised.

The Eastern Germany-based operator Eurawasser has adopted a holistic programme embracing such initiatives as flexible working hours and the provision of in-house childcare. The company not only faced the challenging situation of change management due to takeover by a private water operator, but also the change in political system in the eastern part of Germany – a change that had significant longevity in the region.

Japanese culture famously pushes workers to stay in the office until late in the evening. To encourage a different work-life balance among its employees, Veolia's Japanese subsidiary has adopted "no overtime" days – making everyone go home at the end of the official workday. As a side effect, this practice has helped the firm attract more female candidates to help meet its goal of increasing the proportion of women in its workforce. Employees are beginning to feel comfortable enough to take their allotted days of leave, and men are even beginning to request paternity leave.

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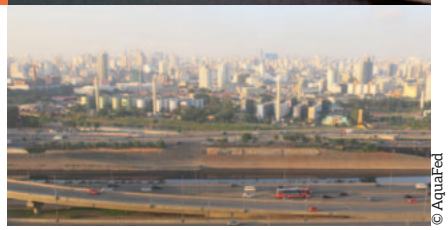

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3.9 GEOGRAPHIC MOBILITY

With operations in various jurisdictions, water operators can provide employees with individual career opportunities – and not always within one geographic area.

Companies can offer assignment within their operations in the same countries or abroad as rewards to improve the employee motivation.

By shifting to a different company in the group, employees have the chance to learn as well as share their own experiences and expertise. This geographic incentive can be particularly helpful in times of change, where companies can benefit from a new and experienced workforce with specialized skills and knowledge at all levels of the organisation. Geographic mobility can support performance management or change management on the operators' part.

BOX 04. INTERVIEW WITH EUGENIO LAMMEL: CAB AMBIENTAL – FEBRUARY 2016

"The private groups which are expanding or trying to expand their business in wastewater are in great need of experienced managers and professionals. Some operators trying to get into the water and wastewater sector are from very different business branches and therefore need people specialised in this expertise within the group.

It is a challenge for the operators to conserve experienced people, for both, management and technical operational tasks. It is common to meet colleagues who move from different companies. But the processes of the transference from public to private, either with concession, public-private partnership or other models regulated in the legislation, are in general very slow and are influence by the political vision and decision making of the public authorities. This is why in certain times the demand for professionals in this sector increases or decreases with also an effect on the continuity of labour. The people who search for professional development in the private sector of wastewater should evaluate carefully the business portfolio of the operator – what is the strategic plan of expansion, of sustainability and risk management – and also the know-how it holds and the technological standards it uses in its operations."

BOX 05. EURAWASSER (ROSTOCK, GERMANY) – IMPLEMENTING INNOVATION

Sustainability for the biggest German private water operator, Eurawasser, is key to its business. To ensure it is able to tackle future challenges in the sector, the company must look at providing an attractive work environment, as well as individual career development possibilities and a focus on health and safety.

One challenge facing the company is the age structure of its staff. Aging employees and the lack of new and young workers are typical for the region's specialised labour market. Motivated, skilled employees with a secure and safe workplace are vital to the company's success. One strategy that they have used has been close and continuous communication – two-way and bottom-up – between employer and employees. This includes the direct involvement of employees in identifying workplace solutions; it also includes peer-to-peer training to help employees better manage stressful situations and provide more effective user and client services (i.e., in crisis situations). In case of leakages for example, staff have to be trained to handle not only technical challenges but also service-related challenges.

Further to this, the company works with a major health insurance agency to guide an exchange with employees on how best to optimise the workplace. Employees collaborate with the company and agency to identify and implement actions that will promote a healthy work environment. One example of this involves eliminating the health impacts of working within the solid waste sector. Previously, sewage sludge had been worked manually. However, a team of employees, together with the health experts, developed an automatic sludge distribution machine to eliminate this hazardous work. The same process has also resulted in the development of special lifting pins, ergonomic seats in heavy machines and site vehicles, and personalized protective clothing and equipment.

The company has in addition established a focus on respecting the work-life needs of its employees, for instance recognising and respecting the need for flexibility with employees in family situations. Working hours are adapted to fit a family-friendly model, while the employer also embodies the importance of supporting families and parents by providing in childcare opportunities.

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3.10 MANAGEMENT DEVELOPMENT

Over and above individual training for workers, supervisors and managers, the various phases of a project require the overall management structure to be reviewed and adjusted from time to time to meet the needs as these evolve. The following example illustrates this.

When Societé des Eaux de Saint Marc (SESAM), a subsidiary of the French based LYSA, began working in Saint Marc, a coastal town of 120,000 about 100 kilometres northwest of Port-au-Prince in Haiti, within five years of specialised capacity-building, an independent locally recruited management team, including a CEO, had been established.

The personnel from the previous public institution were retained. As they adjusted to a new corporate culture, staff members received training in modern managerial and organisational techniques. Additionally, new recruits were brought on to fill roles that were previously not commonplace in Haiti. These included volume-based meter consumption billing, which required consumer education and rigorous oversight. Additionally, and crucially for successful operations, relationships with public agencies and civil society organisations were strengthened.

To achieve these goals, management had to adapt to the new corporate culture and embrace the dual objectives of improved performance and operational balance. In the initial five-year phase, the mother company LYSA provided technical assistance, which included permanent expatriate staff and regular technical and organisational support missions. A strict management framework and ad hoc technical assistance missions supported the autonomy of the local staff.[3]

3- AquaFed (2015), p. 25.

BOX 06. TESTIMONIALS

INTERVIEW WITH ANNIE COULANGE, HUMAN RESOURCES AT EAUX DE MARSEILLE: MARSEILLE AND CONSTANTINE – DEVELOPING A MANAGERIAL TEAM – FEBRUARY 2016

From 2008 to 2012, the French water company Société des Eaux de Marseille (SEM) helped to modernise the public water and sanitation services of the Société des Eaux et de l'assainissement de Constantine (SEACO), an Algerian water company, through a management contract.

In its initial stages, the partnership faced three main challenges. SEACO drew its employees from two different public agencies. Each had its own culture, and they had no experience working together. The first challenge was to take this group of 1,200 employees and forge a single identity and culture.

Secondly, according to the contract, the local staff was supposed to take over within five years. A coherent management team needed to be put into place. It would be tasked with the dissemination of the new corporate culture to the rest of the staff.

Finally, water and sanitation services in Constantine needed to be upgraded to better serve the district's 1.2 million inhabitants. To that end, SEM began a technology transfer programme that included employee training.

To ensure that the Algerian management team would continue to instil the new culture in the organisation, its training contained two elements. Local executives worked on a daily basis with their SEM counterparts, and locals were gradually moved into positions of responsibility for managerial practices. In parallel, managers took part in a coaching programme. Cohesion among the Algerian staff was encouraged by ensuring participation by a wide cross-section of individuals.

INTERVIEW WITH MARIA THERESA MEDINA PANGANIBAN: BWSI GROUP OF COMPANIES - JANUARY 2016

Ms. Theresa Medina Panganiban took her first job with the Balibago Waterworks System, Inc. in 1982. Armed with an accounting degree, she started at the very lowest rung as a customer service clerk. During the ensuing three-plus decades, she worked her way up the ladder to become director of operations for the BWSI Group of Companies, the umbrella organisation that oversees seven subsidiaries, including the one where she began her career in water.

Lacking formal training as an engineer, Medina Panganiban has relied on colleagues to develop an understanding of the technical side of the business. "I learn a lot from interactions with technical people," she said. "The company encourages us to go further [with] training. But in my case, my experience has honed my skills."

The executive expressed gratitude for the support she's received along the way. "I can only return to the company that looked after my welfare," she noted. "The company appreciated me despite [my] weaknesses. I can only reciprocate their kindness with dedication and utmost service. I did not join any other company because the little things make me happy. I was well provided for by the company I served."

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4. Water Operators AS INDIRECT EMPLOYERS

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All economic activity creates direct employment within a company and also has an indirect employment effect according to the International Labour Organisation. All water operators use subcontractors, ranging from small contracts and small companies to complete contracts on big projects.

This indirect employment can impact the economy either vertically or horizontally. A vertical effect primarily impacts local suppliers (of raw materials, parts, components, services, etc.) and local customers (e.g. distributors, service agents, etc.). A horizontal effect can be narrow – referring to employment impacts felt within the same industry – or broad – referring to employment impacts on local enterprises active in other industries (for example, transport, construction, security companies). Good operation of a water service contract combines both.

Indirect employment is generated by macroeconomic factors in the local economy, resulting from spending, savings and investments by the workers and shareholders of the private water operator. It is also generated through increased government taxation revenue.[4]

The following sections look at the effect of indirect employment on and with subcontractors and suppliers of private water operators.

4- Kim. Kee Beom (2006).

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4.1 PROFESSIONALISATION OF SUBCONTRACTORS AND SUPPLIERS

Private water operators engage local businesses to support of their activities. The outsourcing of some activities allows them to enhance their performance, to focus on their core business, and to create jobs in the region.

They need to have reliable partners as they themselves are closely monitored by public authorities and laws. The operators want the companies they work with, including subcontractors and suppliers to apply the same high standards and to enjoy the same level of standards for health, safety, security, and environmental issues. This is a matter of responsibility, safety, performance and reputation.

These companies have a strong interest in ensuring the health and safety of every worker/employee – either their own or those of subcontractors and suppliers. They also have a vested interest in ensuring the sustainability of the works and services they provide and in focusing on the optimisation of costs and keeping to programme. Because the private water operators need to protect the environment as part of their day-to-day business, subcontractors and suppliers have to fulfil the operator's standards to ensure the operation's complete sustainability – economic, societal and environmental.

Private operators share their own performance standards with their subcontractors and suppliers using a variety of different means. They train their subcontractors and suppliers and promote a culture of health and safety in the workplace. This can include site visits, training, and awareness days.

In addition to their focus on health and safety, private water operators help their subcontractors integrate and take into account social responsibility.


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4.2 LOCAL EMPLOYMENT OF SUBCONTRACTORS AND SUPPLIERS

When private water operators start their operations, they not only need the formalized workforce within the company but also have to invest in maintaining the infrastructure or building new works.

In many cases, the construction of new infrastructure, and the extension and maintenance of water and wastewater networks, require that the private water operators hire subcontractors and use external suppliers. Private water operators seek to share with the companies they work with the same level of standards. This is a matter of responsibility and reputation.

Because water operators operate locally, the preferred method for building their workforce and finding suppliers for their materials is to hire locally. In this regard, private water operators help to support and evolve local economies by prioritising local decent employment and procurement. Once operators have contracted with local suppliers and job seekers, they then build their capacity with the aim to developing systems that will allow them to meet the standards of both clients and public authorities.

In order for private water operators to deliver water and wastewater services they need the staff and workers of their subcontractors to work in a well-regulated social environment. They must be aware and trained on the risks involved in the work they are doing, and need to have personal protective equipment and benefit from a medical follow-up.

Respect and support of suppliers and subcontractors' staff and representatives are essential conditions to maintaining solid business relations and forging partnerships. The private operators´ strategy is dynamic, and its main objectives in the context of suppliers and subcontractors are to improve technical knowledge and to enhance the focus on customer relations and services. The focus on promotion of health and safety culture at work and to increase the operational performance of the suppliers and subcontractors is as important as to ensure sustainable empowerment and consolidation of corporate social responsibility (CSR) projects and require the same standards as those implemented by the private operators in their own direct operations. The ripple effect of these efforts on the local decent employment sector cannot be denied.

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4.2.1 Subcontractors

Private water operators engage local entities to perform activities for them. This refers to the practice of hiring an outside company or provider to perform specific parts of their business contract or project – a specific task.

The subcontracting company and the water operator work closely throughout the project, and the hiring party has a reasonable amount of control over the process.

There are a number of reasons for water operators to hire subcontractors. Generally speaking, when a private water operator starts up an operation, they are under pressure to be immediately successful. This requires a significant investment in infrastructure, personnel and know-how. Subcontractors can fill the gap and allow a more rapid response to the demand. Subcontractor activities allow the water operators to be enhance their performance, to focus on their core business, and – additionally – create employment in the region.

Hiring subcontractors allows operators to fill temporary workforce needs, as well as to meet a need for skilled labour that they might otherwise not be in a position to meet. By policy, subcontractors have to follow the standards set by the operator and the public authorities.

For example, the Senegalese des Eaux (SDE) uses subcontractors in stated contractual frameworks. Within the context of the re-assessment process, SDE meets the active suppliers once a year to support and sensitise them to SDE management requirements. Other operators support micro-business through a special programme such as the Algerian private water operator SEAAL (inclined action companies des Eaux et de l'Assainissement d'Alger).

BOX 07. MICRO-BUSINESS PROGRAMME IN ALGERIA

The Algerian private water operator SEAAL supports micro-companies by helping them to develop their activities with the first experimental site started in Tipasa in 2011. Twelve micro-companies were involved in installing water meters, each of them providing employment for two to six people. The private water operator SEAAL signed a framework convention of a "micro-business programme" with defined service contracts.

To ensure the quality of the service provided by the micro-companies, and with a focus on local economic development, SEEAL emphasised micro-entrepreneurial training in the development of their service contracts. The water operator's human resources staff used a two-way communication approach to provide knowledge and receive feedback from the 12 micro-entrepreneurs on the difficulties they meet in implementing the project. As these difficulties were mainly related to customer relationships, the micro-entrepreneurs received specialised training in that area.

The challenge was that customers did not understand why the companies were installing water meters and reacted strongly to the staff. So beyond the technical skills transfer specified in the contract – that is, how to install the water meters – companies received training on service delivery and direct customer support to meet SEAAL standards. The training resulted in the creation of 50 jobs

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4.2.2 Suppliers

Private water operators contract suppliers, which also creates jobs. To deliver water and wastewater services, private water operators need materials and equipment.

There is a multiplier effect on the economy and employment when money is invested in water and wastewater service provision, allowing infrastructure renewal, repair, or building. All money invested in infrastructure creates employment – direct employment within the private water operator as well as for subcontractors and suppliers.

For example, in Milwaukee (United States), the private water operator is required by national law and its contract with the public authorities to work with local suppliers and subcontractors to enforce the local suppliers and employment sector. Here Veolia Water Milwaukee empowers the local community through minority business forums.

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4.2.3 Reinsertion Programmes

Reinsertion programmes are developed together with the public authorities or political leaders to support the local communities either in awareness raising or in professional training programmes. They are designed to help people with learning difficulties or other handicaps to receive professional training so that they can enter the formal labour market. This enables them to start decent work within the sector or to set up their own enterprise offering subcontractor services.

Local contracting of subcontractors and suppliers is important for private water operators. The local professional expertise and knowledge enables operators to deliver efficient and effective services to the users. Involvement in local communities, as well as involvement with public authorities and political leaders, strengthen the bonds of trust with all stakeholders.

"The building of the installations creates new jobs or secures existing jobs within the construction companies who are awarded the contracts. Where possible, building services are put out to tender locally in the partner country in order to strengthen local businesses and improve local employment prospects. However, even when projects are putout to international tender, the majority of the work which takes place during construction benefits the national workforce since international companies also recruit locally as much as possible for cost reasons."[5]

The creation of employment and the maintenance of jobs, the efforts of the private operators in activities such as professional training of people and the professionalisation of subcontractors and suppliers, have a lasting beneficial impact on the communities where operators are established.

5- Denfeld, Bianca (2012).

BOX 08. REINSERTATION

Global procurement

Veolia's Global Procurement Department embarked on a plan to encourage the use of the sheltered and supported employment sector, in particular in certain purchasing categories such as the maintenance of parks and gardens, laundry, waste collection and treatment, management and administration, printing and publishing, logistics and transportation, catering services and industrial subcontracting. In 2013, a new half-day training programme was developed to raise awareness and encourage purchasing commissioners to support the employment of disabled people. The aim of the programme is to set out a methodological framework to create win-win partnerships with service providers in the sector. In addition, the procurement function provides purchasing agents and purchasing commissioners with a directory listing useful information, such as lists of suppliers by region and the types of service they offer. For the fiscal year 2014, the procurement expenditure (excluding tax) recorded for the sheltered and supported employment sector was €6 million for France.

Senegal

Senegalese des Eaux (SDE) implements various programmes focusing on development of professional capacity for groups of the community with difficulties in finding formal employment opportunities. One of the training programmes is on plumbing. It enables up to 60 young people from the community to receive training on a technical profession and the customer-related skills required to enable their entry into the formal labour market in the sector. Another plumbing professional training programme was launched by SDE together with prison authorities. This programme aims to train young inmates who lack professional qualifications to facilitate their social reinsertion when they leave prison.

Chile

In 2015, thanks to strong engagement with local communities and public authorities, the Chilean, Valparaiso based private operator ESVAL launched an extraordinary programme focused on professional trainings for women without formal professional education and without economic resources. Under the auspices of the Ministry for Women and Gender Balance, this programme focuses on providing professional training for women on sanitation fitters (plumbers). With 120 hours of formal training, these women enter the workforce with a professional certificate; this certification, combined with the fact that the work standards are approved and set by the operators, has multiple effects. Indeed, the professionalisation of this traditionally marginalised group, directly contributes to their community and is in direct support of households and education of the future generations.

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5. Contribution

TO THE LOCAL ECONOMY AND LOCAL JOB OPPORTUNITIES

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5

Global, national and local economies depend on good water and wastewater management. Improving water and sanitation supply and water resource management benefits economies and people, boosting economic growth (production and productivity) and contributing greatly to the eradication of poverty.

This last section of the report focuses on the contributions of private operators to the wider economy and environmental sustainability. However, it is more difficult to show the impact of good water operations on employment in these contexts because most of the impacts and benefits are in the form of externalities.

Private sector engagement and development in the water and wastewater sector are directly linked to a country's development at the local and national levels. Investment in good and reliable water and water-related services has a direct impact on people and a country´s economy. It creates jobs and enables companies to secure their business within and outside the country.

The direct effects on employment in all sectors – including industry and agriculture – are obvious. Political decision-makers must set priorities and should investigate reforms to improve institutional performance and attract investment. Investment in the water sector makes good economic sense and improved water, wastewater and water resources management are recognised as critical for economic growth with impacts on all sectors of the population.

There is a multiplier effect on the economy and employment when money is invested in water and wastewater service provision. All money invested in infrastructure creates employment – direct employment within the private water operator as well as for subcontractors and suppliers.

In France, SOGEDO talks about the "snowball effect" in the local economy and estimates that one job at private water operators generates 1.4 jobs outside the operation (subcontracting, buying goods, investment, salaries).[6]

A recent study for the US Conference[7] of Mayors found "that public infrastructure investment yields positive returns, and investment in water and sewer infrastructure has greater returns than most other types of public infrastructure.". Its findings included:

A recent study estimates that $1 of water and sewer infrastructure investment increases private output (Gross Domestic Product, GDP) in the long-term by $6.35.

Public estimates indicate that for each additional dollar of revenue (or the economic value of the output) spent on operating and maintaining water and sewer systems increased the revenue (economic output) that occurs in all industries is $2.62.

The same analysis estimates that adding 1 job in water and sewer creates 3.68 jobs in the national economy to support that job."

6 http://www.sogedo.fr/blog/eau-une-activite-creatrice-demplois/

7 Local Government Investment in Municipal Water and sewer Infrastructur: Adding Value to the National Economy - The U.S. Conference of Mayors - Mayors Water Council - Washington, DC -August 14, 2008.

The interconnectivity of the various economic sectors is obvious. Changes in water use in one sector or region has a ripple effect across the economy ranging from tourism through agriculture to small local businesses or vice versa. Gains from improved water and wastewater services and water resources management benefit local economies and people most because they include measures to improve people's health and livelihoods. They also assist in building the resilience of economies to such things as extreme weather events or rainfall variability. This enhanced resilience enables both direct and indirect employment opportunities.

BOX 09. WATER RELATED GLOBAL TRENDS

Water and economy are inextricably linked and affected by global trends such as climate change and water pollution. Water-related activities will be impacted by the increase in global population (estimated at 33% over 30 years, to a total of 9.3 billion people), the related increase in food demand (estimated at 60% by 2050), and the doubling of the urban population from 3.6 billion to 6.3 billion by 2050. Lack of water currently already affects approximately 40% of the global population. Good water and wastewater management is therefore key to facing these global challenges.

Source: UNESCO (2016), p 21.

Reliable, good quality water supplies and the safe removal and depollution of water once it has been used are essential for people and for the businesses and commerce that employ them or provide their living. Water supply and wastewater management are both important factors influencing health, the environment and economic development.

Everything is connected. To work, people need to be healthy. Protecting public health is a prime reason for having public water and sanitation services. To work to earn a living, people need to have the time to engage in paid and formalised work. Collecting water and overcoming the lack of organised water and sanitation services often constitutes unpaid work for women and children. Performing these tasks often means that they have no time or energy to take up paid work. To work productively, people need to be educated, but in many places the lack of water and sanitation in schools limits or prevents

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girls reaching their full educational potential. According to the Swedish International Water Institute (SIWI), the biggest potential gain for increased productivity and production within both households and economic sectors is found in the time-saving factor of access to water and wastewater services – it is estimated that it amounts to 64 billion USD.[8]

Water is a raw material and input for many economic sectors. Most businesses, from hairdressers to microprocessor factories, depend on having a good water supply and being able to get rid of the water once they have used it. The cost of a water service is often minimal in a business' value composition, but the cost of these services failing or not existing can be very substantial.

The World Business Council for Sustainable Development (WBCSD) has used the slogan "no water no business" since 2004. In recent years, organisations like the World Economic Forum and the insurance industry have recognised the growing risks and impacts that a lack of water and wastewater poses to business and industry. As previously noted, water is a factor when determining location for economic and business investment and a tool for promoting industry and trade. There is therefore an effect on the ability of businesses to create jobs in places where services are poor or at risk. Improved infrastructure for water supply and wastewater disposal is one of the bases for investment, economic growth, employment and combating poverty.

BOX 10. HISTORIC VIEW ON WOMEN AND WATER IN THE U.S.

In the USA in the 19th and early 20th centuries, the most significant inconvenience for residents was the lack of running water. Every drop of water for laundry, cooking, and indoor chamber pots had to be hauled in by the housewife, and wastewater hauled out. The average North Carolina housewife in 1885 had to walk 148 miles per year while carrying 35 tons of water. Coal or wood for open-hearth fires had to be carried in and ashes had to be collected and carried out. There was no more important event that liberated women than the invention of running water and indoor plumbing, which happened in urban America between 1890 and 1930.

Source: Gordon, Robert J. (2012).

Part of the role of private water operators is also to protect the environment. They do this primarily through the collection and cleansing of used water. Operators then return the water to ensure healthy environments. They also install and operate systems for stormwater management and flood protection. These activities have a direct impact on the economy, as well as individuals' sense of well-being, given the attractiveness of water environments (lakes, rivers, beaches). Water environments offer an indirect impact on the economy by way of leisure and tourism industries, which are often major employers.

8- SIWI (2005), p. 7.

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5.1 ECONOMIC BENEFITS OF POLLUTION MANAGEMENT

Water is used and reused over and over as it moves through the environment. Each use has an impact on the others and must be considered in the system of water operations.

Water pollution not only affects public health, the environment and local economic activities, but also the national economic competitiveness between countries. This is due to the growing link between access to external markets and the environment, which is measurable through disputes in the international trade related to the use of environmental standards as non-tariff barriers.

For example, the Latin American cholera epidemic of 1991 is one of the most dramatic illustrations of the effects of the lack of safe drinking water and wastewater services. The Economic Commission for Latin America and the Caribbean reports the resulting losses related to the export of fish products from Peru alone in more than US$ 700 million.[9]

The many benefits of wastewater treatment can be observed in terms of public health, quality of life and environmental protection. In the case of Chile, the impact of lack of wastewater treatment on the national economy due to decrease of export of agricultural product since the cholera has been the driving force in implementation of wastewater services.

The positive effects on the economy resulting from depollution of water have been the important driver. Investments are funnelled into changing in the country's irrigation practices, which now use clean water for agribusiness. The export reduction had a negative economic impact which was directly linked to complaints on the wastewater irrigation. Clean water irrigation promoted the quality of Chilean agricultural products for external markets. The trust in quality and pollution-free agricultural goods was important. These developments in the export and tourism industry had a positive impact on national employment rates, and ensured the quality of water bodies that are used for drinking water supply.[10] It is also important to note the significant social and economic savings by improving the public health.

BOX 11. WASTEWATER TREATMENT IN CHILE

Ensuring access to external markets was one of the driving factors for Chile to start an investment programme for wastewater treatment. After the cholera epidemic, traditional wastewater irrigation was a risk to the external market for agricultural products. The estimated investments in wastewater treatment amounted to approximately US$ 2 billion and threatened the financing of other important governmental programmes. Considering the time pressure to react as quickly as possible, the government decided to finance these investments through private participation. Private water operators started their operations in 1998 and six years later, all Chilean water operations were implemented by private firms – beginning with the Valparaíso Sanitary Works Company (ESVAL) in 1998, the Metropolitan Sanitary Works Company (EMOS – now Aguas Andinas) in 1999. The rate of progress was rapid: the coverage of the wastewater treatment plants increased from 8% in 1989 to 100% in 2012.

Source: Jouralvlev, Andrei (2004) p. 23.

9 & 10- Jouralvlev, Andrei (2004), p. 23.


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5.2 PUBLIC HEALTH

A healthy population is the basis for good economic activities, for education and for the current and future employment in a region and country.

Public health is directly linked to good water and wastewater management. Safe drinking water and sanitation are the roots of modern water and wastewater services. Back in the 19th century, when cities discovered that safe water would reduce or even eliminate waterborne diseases such as cholera, the systematic installation of water infrastructure and water treatment began.

Water supply and sanitation services have long been recognised as primary public health protection systems. However, despite this knowledge and awareness, one-third of the world's population still lack access to clean water and safe toilet facilities today. For many more, the service is unreliable, irregular or deficient in some other way. Uses of water that involve human consumption or contact are particularly sensitive to water conditions and must meet standards developed to protect human health. When these standards are not met, the implications are important.

Private water operators have produced significant improvements in the reliability of water supply which has done a great deal to protect public health as well as improve convenience for water users. A striking example is that of SEAAL in Algeria, where continuous 24/7 water supply was extended from only 8% of the population to 100% in just four years.

Water-borne diseases are one of the primary causes of child mortality. Over 315,000 children under the age of five die each year due to diarrhoea contracted from contaminated water. The World Health Organisation states that the burden of diarrheal disease from inadequate drinking water is high. Based on the distribution of the different types of water sources and the associated risks of diarrhoea, outlined 50,000 diarrheal deaths in low- and middle-income countries can be attributed to inadequate drinking water.[11]

The direct link between health and a country or region's economic development is clearly visible.

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BOX 12. SOCIÉTÉ D'EXPLOITATION DES EAUX DU NIGER

In addition to running their core business properly, some companies have added specific measures to improve the living conditions of their employees and the communities in which they reside. One example is the Société d'Exploitation des Eaux du Niger (SEEN), which operates nationwide, serving 168,000 customers and ultimately more than 2.3 million people. SEEN draws on the operational expertise of Veolia. Working with the French company's health and safety division in 2007–2009, SEEN trained 550 employees as "hygiene ambassadors" to help improve health conditions in local communities.

11- WHO (2014), Worldbank (2003).

5.2.1 Preventing Water-related Diseases

For water operators, the provision of clean water and sanitation services represents their core business. Their job is to make the system work better and to extend service to people who have been going without. They provide improved service, reduce spillage, speed up repairs, reduce or eliminate shortages, provide cleaner water, and boost water pressure and improve sewer flows.

In some regions of the world, such as South America, drinking water supply and sanitation services are almost exclusively consumed by households. Here, the most important effect of the coverage shortfall is on public health. It has long been recognised that proper access to efficient and safe drinking water supply and sanitation services considerably reduces morbidity and mortality caused by water-transmitted diseases[12]. Water, sanitation and hygiene have important impacts on both health and disease[13].

Inadequate drinking water, sanitation and hygiene are estimated to cause 842,000 diarrheal disease deaths per year[14]. When water and sanitation services are provided to vulnerable communities, the number of bacteria, viruses and protozoa transmitted through waste material drops remarkably with important effect on the decrease of the number of cases of diarrhoea.[15]

About 5.5% of the loss of disability-adjusted life years (DALY) in Latin America and the Caribbean is due to deficiencies in drinking water supply and sanitation services, compared to 1% in the industrialised countries and 7% in developing countries. In the countries of the region, these deficiencies are the most significant risk factor of all those relating to the environment (air pollution, vector-borne diseases and agricultural and industrial pollution)[15]. It is estimated that the yearly total health expenditure related to wastewater pollution in the Metropolitan Region in Chile are between 41 and 53 million USD.[16]

As in Europe, the Americas endured the cholera epidemic for a large part of the 19th century. Although cholera was eradicated from Latin American at the end of that century thanks to the establishment of drinking water supply and sanitation systems in large cities. However, in 1991, the epidemic struck Latin America again.

In Argentina, private operators providing such service in Argentina were delegated responsibility by the public authorities of municipal water companies in the 1990s; they have been able to cut child mortality by 5 to 8%.[17]

12- Jouralvlev, Andrei (2004), p. 24.

13- "In 2012, 502,000 diarrhoea deaths were estimated to be caused by inadequate drinking water and 280,000 deaths by inadequate sanitation. The most likely estimate of disease burden from inadequate hand hygiene amounts to 297,000 deaths. In total, 842,000 diarrhoea deaths are estimated to be caused by this cluster of risk factors, which amounts to 1.5% of the total disease burden and 58% of diarrhoeal diseases. In children under 5 years old, 361,000 deaths could be prevented, representing 5.5% of deaths in that age group." Prüss-Ustün, A., et.al.

14- WHO (2000).

15- Lvovsky, Ksenya (2001, p. 3.

16- Aguas Andinas (2003).

17- Galiani, Sebastian / Gertler, Paul / Schargrodky, Ernesto (2005), p. 83.

Over the course of a decade, the water company in the city of Campo Grande, in the central Brazilian state of Mato Grosso do Sul, improved services enough to reduce the hospitalisation rate due to diarrhoea by 86%. Across the Atlantic in Morocco, the Tangiers water company Amendis struck a blow for better public health by eliminating the threat of recurrent flooding in 79 critical points in the city, thereby helping to improve sanitation and hygiene.

Some countries were at first reluctant to report the cases detected, for fear of adverse effects on tourism and exports. Indeed, despite the fact that tourists usually run a low risk of contracting cholera and the disease is rarely transmitted through food exported commercially, the loss of income from tourism and the restrictions imposed on food products resulted in substantial economic losses for the infected countries.[18]

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BOX 13. BEHAVIOURAL CHANGE PROGRAMMES TO PREVENT WATER-RELATED DISEASES

In Niger in central western Africa, the Société d'Exploitation des Eaux du Niger (SEEN) promotes training programmes on water, hygiene and health.

This water operator is active in the landlocked country, and serves 2.5 million people through 54 centres. SEEN ran a two-stage educational program called Water and Health which focuses on behavioural change. Training initially started with employees and was later provided to customers to reduce water contamination after it flows from the tap, to improve how it is handled, stored and transported.

Participants are encouraged to change their own behaviours and to pass along their newfound knowledge to fellow citizens, especially to the managers of community standpipes. Staff evaluations demonstrated that 95% of employees found the training program useful, and that many were changing their behaviour – for instance, washing their hands more frequently.

Many employees give positive feedback on the training and ensure their willingness to continue to receive related information and volunteered to participate in similar endeavours in the future.

Managers subsequently observed improvements in both customer service and in how customer viewed the company.

18- Jouralvlev, Andrei (2004). p. 17.

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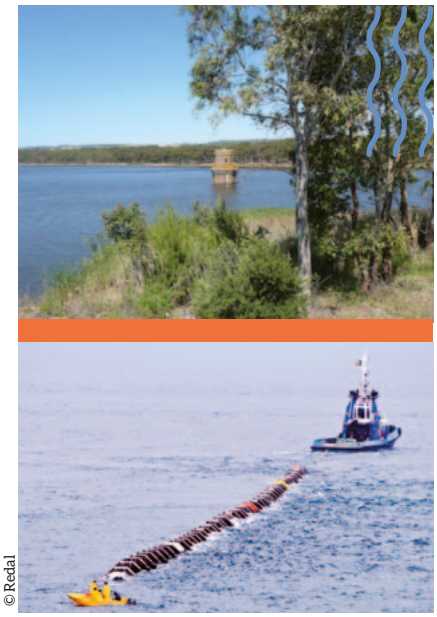
The need to renew and invest in infrastructure today is not just an issue for developing countries. In the so-called developed countries, the initial investments in water purification and treatments systems, that eliminated the water-related diseases like cholera, was often done over a century ago. Lack of investment and maintenance has left infrastructure that is often too old, malfunctioning and insufficient to cope with the current needs.

The deficit in coverage of services has socio-economic impacts not only in terms of health, but also in terms of the availability of water for various uses associated with productive development. Perhaps the most important aspect is that the provision of sanitation services, especially wastewater collection, treatment and disposal affects the quality of the water resources available for other water users downstream in the same river basin. Apart from the obvious effects of water pollution, the main problems relate to irrigation in the agricultural sector, urban water uses and hygiene.

The importance of improving water and sanitation in low- and middle-income settings for the prevention of diarrhoeal disease burden is obvious. Efficient and effective wastewater treatment and the provision of reliable piped water, community sewage with treatment and hand hygiene reduce the exposure of the people and are key for risk reduction. The health of the population has a direct impact on its employability and ability to receive education. Healthy people can advance in their education and reach further in their professional lives.



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5.3 ENVIRONMENTAL PROTECTION FOR ECONOMIC DEVELOPMENT

Since the 1970s, environmental awareness has increased worldwide and new environmental standards have been developed.

These standards have developed into an increasing number of regulations as human activity results in negative impacts on the environment. These regulations imply strict standards for water operators, as well as control over their performance by the public authorities in the contract. By working in an economically efficient manner, it is the nature of a private water and wastewater operator to protect its primary resource – water.

Private water operators' activities are not limited to service delivery. Through their core business, water companies contribute to the responsible management of water resources, which includes protecting and restoring water-related ecosystems such as aquifers, wetlands, rivers and lakes, coasts and forests. Protection of water quality upstream and the sustainable management of wastewater, with an aim of achieving a nil impact on the environment, is at the core of the business of each private water operator.

Depollution of areas leads to a better natural environment, which allows for growth and development of new economic activities. The resulting impact on the region's economic development also has an impact on regional employment, including tourism and agriculture, which are two economic branches that are heavily dependent on a non-polluted environment, and can lead to even further economic expansion.

Variations in performance worldwide are due to different development standards in different countries, and also depend on how involved private water operators are in operations – which is defined by the public authorities.

Operators care about the upstream environment. In supply and demand terms, "upstream" provides operators with a supply of raw material - water. There are benefits to the environment when operators are involved in upstream protection. These range from reservoir management and aquifer protection, to working with farmers to reduce runoff of agri-chemicals, fertilizers and manure, and to optimised livestock stocking rates. In economic terms, better original water quality saves costs in current and future water treatment. Often, these protective and proactive actions imply close collaboration with local stakeholders to work towards sustainability.

Water operators also do much in the way of corporate social responsibility to improve their image in the community. For example, Saltillo – with a population of over 700,000 – is the capital of the north-eastern Mexican state Coahuila. The town is situated in the Sierra de Zapalinamé, an area with two main ecoregions – desert and foothills. The Sierra de Zapalinamé serves as the town's main source of water. Working with local civil society organisations, the water company Aguas de Saltillo facilitates contributions to conservation efforts in the region via a voluntary surcharge on customers' water bills. Over 40,000 households use that mechanism to channel funds to an association called Profauna, a group that plants endemic trees inside a protected area to restore the forest cover, thus protecting the water sources.

When measuring ecological footprint, companies measure supply (bio-capacity) and demand (use by and waste from humans) on nature. Reduction of an operator's ecological footprint and that of the cities where they are working is part of the operator's job. This is primarily a role related to sustainable and responsible wastewater management. Activities range from release of treated wastewater into the environment with low to no environmental impact to reduction and elimination of odour or noise pollution.

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Working with the industrial and business sectors to optimise water use and to limit pollution is also effective for environmental protection. This is done in the context of municipal wastewater and also with specific contracts and processes. There are excellent examples of this in industrial parks in China and Europe. Industrial wastewater can also be recycled within an industrial site, or reused in agriculture as is the case in Brazil and Mexico.

BOX 14. WATER AND WASTEWATER IN INDUSTRIAL PARKS

Industrial parks have formed part of the economy in both developing and developed countries for a long time. They provide competitive advantage for the businesses and also sustainable benefits beyond the demarcations. They ensure effective water and wastewater management together with liquid and solid materials recovery to limit pollution.

The specialisation of industrial parks permits "tailored" water supply, effluent collection and treatment and leads to maximisation of use and reuse of available water and other materials. This enables the whole water cycle to be linked with successive steps in the value chain of the processes and products of the industries in the park. For example, the Shanghai Chemical Industrial Park, which groups chemical companies working in chlorine chemistry, has an integrated water and wastewater and solid waste services operator.

In some cases, the provision of specialised effluent treatment to preserve a country's specialised industry has been the reason for creating a park. In Turkey, the Tuzla Organised Leather Industrial Zone project in Istanbul is an example. Here the tanning leather industry moved from the centre of the Turkish capital to a new created industrial zone in late 1980s and started operating in 1992. The pooling of the resources has the advantage of the central collection and common treatment of the toxic tannery wastewater. It is one of the largest tannery wastewater treatment installations worldwide.

Source: WWAP (2015), p. 59.

Pollution prevention and pollution reduction activities form an essential part of the core business of private water operators. This is the basis for being able to deliver good and sustainable services. Part of this work involves wet weather management systems. Water operators must cope with stormwater and reduce its impacts – including management of urban drainage systems and early warning systems.

Increasingly, aquifers can be recharged with treated surface water or reclaimed used water. In this way, aquifer levels can be maintained and barriers created against intrusion of salty or polluted water. Examples include Orange County in the USA and the Seine valley in France.

There are also examples of water operators working on processes to assist in aquifer recharge and protection such as done by Suez in the Paris-based Le Pecq Aquifer. These are examples of innovative actions to improve water quality and security.

Preserving wetlands is a viable way of ensuring water resource and habitat protection. Constructed wetlands are used more and more frequently to manage stormwater and also act as a final treatment for wastewater.

Many private water companies go to extra lengths to ensure that the natural environment, especially freshwater lakes and rivers, remain in good quality. These efforts often emerge from partnerships with other stakeholders such as foundations, non-governmental organisations (NGOs), local and national authorities, and community groups.

BOX 15. INDUSTRIAL REUSE PROTECTS JOBS AND WATER SUPPLIES - AQUAPOLO PROJECT – SAO PAULO, BRAZIL

Aquapolo Ambiental is a company formed as a partnership between a public organisation SABESP (49%) and a private operator, Odebrecht Ambiental (51%), whose client is a consortium of Brazilian petrochemical companies.

Municipal effluent from part of the São Paulo Metropolis is treated at the ABC Sewage Treatment Plant, owned by São Paulo's state sanitation company (SABESP. It is then conveyed to Aquapolo Ambiental's Industrial Water Production Plant, which is built on the same site, to be converted into reclaimed water.

The effluent undergoes further biological treatment through a Tertiary Membrane Bioreactor (TMBR). Some of the effluent is treated using reverse osmosis (RO). The final water quality for reuse is achieved by blending the TMBR and RO permeates.

The resulting reclaimed water, or industrial water, is transferred via a 17 km long pipeline to the Capuava Petrochemical Complex in the ABC region in the Sao Paulo metropolitan area.

The Aquapolo Project currently supplies 650 litres per second of reclaimed water to the Capuava Petrochemical Complex. The drinking water that is no longer used for industrial purposes can now be consumed by 500,000 residents of the ABC region. Aquapolo has the capacity to produce up to 1,000 l/s, roughly equivalent to the consumption of 600,000 people.

For Braskem and the other chemical companies, the results are: fixed water cost and availability, advances in heat transfer, reduction in the use of chemicals in the cooling towers, longer equipment life, improved maintenance methods and reduced water consumption.

BOX 16. EXAMPLES OF ENVIRONMENTAL PROTECTION

Gabon

Tourism guidebooks might describe Oyem as "off the beaten path" in northern Gabon, but they also marvel about the lakes that surround the town of 40,000. At Astride one of those lakes, a power plant that operated from 1963 to 2005 spilled oil that contaminated the water. The Société d'Energie et d'Eau du Gabon (SEEG) provides both water and electricity to the provincial capital. The firm teamed up with national environmental officials, local authorities, community groups, NGOs and other private sector partners to clean up the site and the lake. The plant itself was demolished and the debris removed. Then a biological process called microbial assimilation of hydrocarbons was used to treat the water. It marked the first time that technique had been used in Gabon.

Colombia

The water operator in Cartagena, on Colombia's Caribbean coast, focuses on the reduction of water loss and improved bay water quality for the 850,000 residents of the city. Aguas de Cartagena (Acuacar) managed to reduce water distribution losses from 50.6% to 35.3%. This drive was accompanied by efforts to improve the water quality of the bay and coastal wetlands called La Ciénega de la Virgen, notably via the construction of an underwater discharge system.

Algeria

Thanks to a concerted effort by Société des Eaux et de l'Assainissement d'Alger, which serves the Algerian capital Algiers and nearby Tipasa, 85% of the system's water is now treated before being discharged into the environment, compared to 6% a decade ago. The company's goal is to reach 100% by 2020. As an important effect all 72 beaches in Algiers are already open for swimming – up from 39 in 2006.

Brazil

One of the companies of the GS Inima Brasil group, Ambient, is the water operator in Ribeirão Preto, a city of 600,000 about 320 kilometres northwest of São Paulo. During a four-year period starting in 2005, the company planted 37,000 seedlings to repair riparian forests along the town's streams and creeks. This was accompanied by an environmental education program in partnership with local schools that has involved over 70,000 students.

In addition, GS Inima contributed to the construction of a sewage treatment plant in Campos de Jordão, a popular winter resort about 175 kilometres north-east of São Paulo. The new system will help the city of 60,000 cope with the influx of visitors during the high season, when the local population can swell to three times its normal number.

In partnership with Sanessol, the sanitation company in Mirassol, a city of 55,000 about 450 kilometres northwest of São Paulo, and the public school system, CAB Ambiental organised a student drive to collect used cooking oil. Engaging 3,800 students from eight schools, the program was designed to raise awareness about the environmental damage that results when used cooking oil is dumped in the kitchen sink. The oil collected was delivered to a recycling company that transformed it into raw material for biofuel, soap and paint.

USA

In the south-eastern U.S. port town New Orleans, Veolia takes several extra steps to guarantee safe drinking water to local residents at a reasonable price. These include the efficient removal of wastewater to return to the natural environment and storm drainage systems. The firm also takes extra steps to provide water for fire protection and to make sure that customers have all the information they need about products and services.

5.4 CRISIS RESPONSE

The continuity of essential service provision is a crucial element of water supply and sanitation. Any significant outage can have very serious repercussions for the local economy and even at the global level. In emergencies, where lives are threatened and emergency services are strained, water and sanitation are essential to ensure that hospitals can function and to prevent the spread of disease.

Crisis response is therefore one of the most challenging tasks for an operator in full operations. Situations can range from natural disasters such as heavy rains and mudded water, flooding or droughts, to manmade incidents such as pipe failures. It is key for the operator to react quickly and to have a prepared and adequate response to the situation. The population and economic activities need to be shielded and protected from water shortages and the environment needs urgent protection. As everything is interconnected, the effects on employment are directly linked to the management of water and wastewater crisis events.

It is key for operators to have wastewater treatment and stormwater management processes in place to protect rivers, beaches and bathing waters and the inshore marine environment. These are all important natural environments, which also have significant social and economic functions. As a side effect, the protection and restoration of aquatic environments also protects biodiversity.

Stormwater and flooding need crisis response from the water operators but other natural extreme events do too. Private water operators have shown how this can be done. In Chile, after a major earthquake in 2010 services were restored very quickly. Chile was rocked by an earthquake that was more powerful than the one in Haiti that levelled huge swaths of capital Port-au-Prince that same year and took many months to recover from. In contrast, in Chile where water distribution systems were disrupted throughout the country, systems were restored so that within 72 hours of the earthquake, 87.5% of the customers affected had their water flowing again. Within five days, that number had reached 90%, and many of the country's 13 official regions already boasted fully restored service, including Valparaiso, Metropolitan Santiago, O'Higgins, and Araucanía.

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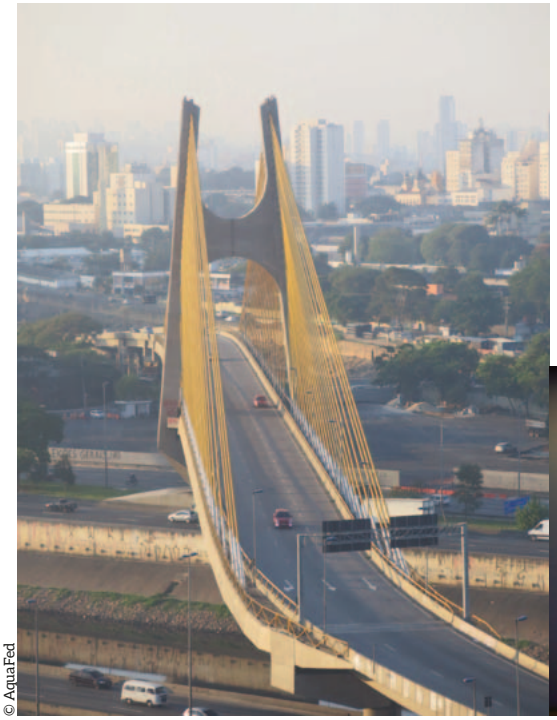
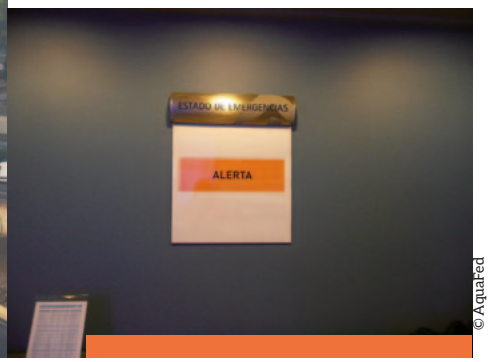




BOX 17. FLOOD PROTECTION IN BORDEAUX, FRANCE

As a result of its geography, the city of Bordeaux and its greater metropolitan area (700,000 people) has always been prone to flooding. Frequent heavy rainstorms, streams that flow towards the city and the tidal nature of the River Garonne are the basic roots of the problem. These have been compounded by the spread of the city as economic growth has led to a larger built-up area with more roofs and roads that speed up the natural run-off of stormwater.

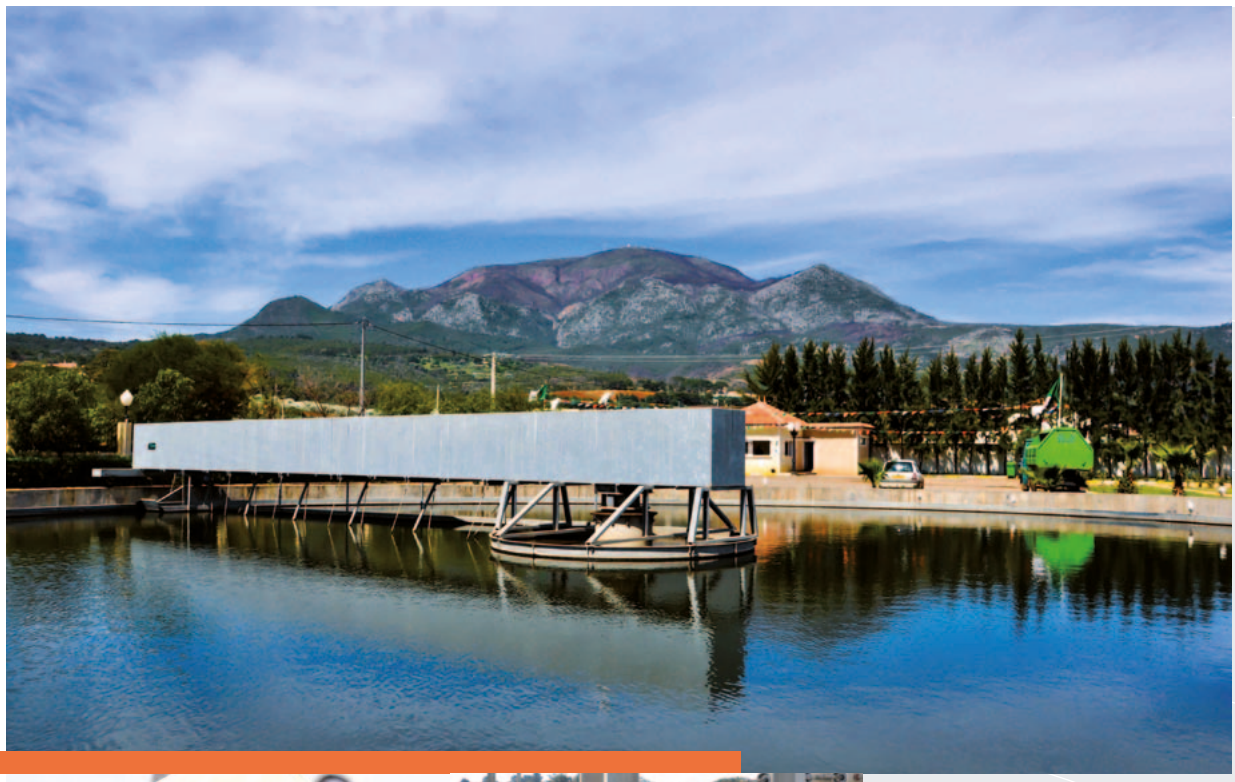
In 1982, the city suffered two catastrophic floods in close succession. Parts of the city were flooded to a depth of 2.5m. Disruption and economic damage were considerable. This led the public authorities to enter into a contract with Lyonnaise des Eaux to develop an extensive programme of flood protection and wastewater management.

Progressively new regulations were established to improve the retention of rainwater at source. Extensive infrastructure of channels, retention basins and pumping stations to collect, store and manage stormwater and sewage flows have been put in place. A sophisticated computer control system to predict storms and manage water flows in real-time has been developed.

The benefits of this have been proven several times since 1982. Over 300 potential flooding incidents have been managed. Notably in July 2013, when a storm twice as intense that of 1982 and occurring at a time of the highest tide in the river was managed without incident and the city protected.

It is also worth noting that this system has had a significant effect on reducing water pollution and in protecting the environment.

While the construction and operation of this system has created a certain amount of local employment, the real benefits and value in terms of jobs, businesses and homes protected cannot be calculated.



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6. CONCLUSION

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Elected representatives have to contend with meeting many objectives to fulfil the needs of the communities they represent. Among these are the provision of water and wastewater services, the stimulation of the local economy and the creation of jobs for local people.

This document, and the examples it contains, show how, by choosing to use a private water operator to deliver all or part of the services, political leaders can advance all of these objectives at the same time.

Professional water operators create formal jobs and decent work for their own workforce. They stimulate good working conditions and employment in the value chain of their suppliers and subcontractors. They improve the coverage, reliability and quality of the essential public services they provide. Through this, they strengthen local economy and the opportunities for employment in other sectors.

In many societies, these actions make the unpaid water-related work, often undertaken by women and children, unnecessary and enable people to have the opportunity to take up education and attain formal employment in the productive economy.

The report also shows how through their efforts in activities such as training, health and safety procedures, and the transfer of technology the work of private water operators has a lasting beneficial impact on the communities they serve.

It is beyond the scope of this report to quantify the number of jobs created as a result of private operators' engagement. Nevertheless, the impact can be gauged to be considerable. In many cases private operators have been called on to provide the expertise and change management skills necessary to convert a failing water service, that is a burden on the community, into a flourishing one that becomes a catalyst for job creation.

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ACRONYMS

AFEB	Association des Fermiers du Benin
Aguacar	Aguas de Cartagena
BWSI	Balibago Waterworks System Incorporated
CAB	Companhia de Águas do Brasil
CePEPE	Centre de Promotion et d'Encadrement des Petites et Moyennes Entreprises, Benin
CSR	Corporate Social Responsibility
DALY	Disability-adjusted life years
ECLAC	Economic Commission for Latin America and the Caribbean
ILO	International Labour Organization
ISO	International Organization for Strandartization
IWA	International Water Association
KFW	Kreditanstalt für Wiederaufbau
NGO	Non-governmental organisation
OHSAS	Occupational Health and Safety Assessment Series
OSH	Occupational Safety and Health
PPP	Public Private Partnership
PPRA	Prevention of Environmental Risks
SANESSOL	Saneamiento de Mirassol
RO	Reverse osmosis
SEAAL	Société des Eaux et de l´Assainissement d´Alger
SEACO	Société des Eaux et de l´Assainissement de Constantine
SEEG	Société d´Energie et d´Eau du Gabon
SEEN	Société d´Exploitation des Eaux du Niger
SED	Senegalese des Eaux
SEM	Societé des Eaux de Marseille
SESAM	Societé des Eaux de Saint Marc
SIWI	Stockholm International Water Institute
TMBR	Tertiary Membrane Bioreactor
UNESCO	United Nations Educational, Scientific and Cultural Organization
WBCSD	World Business Council for Sustainable Development
WHO	World Health Organization
WIKTI	Water International Knowledge Transfer Initiative
WWAP	World Water Assessment Programme
WSP	Water and Sanitation Programme

BOXES

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