

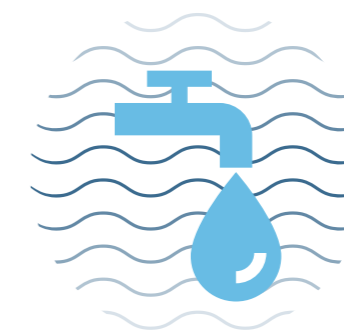


WATER

A GLOBAL CHALLENGE

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WATER A GLOBAL CHALLENGE

Everywhere in the world, water is still a key issue. Source of inequalities when scarce or difficult to access, of geopolitical conflicts when shared, of public health problems when polluted or even of humanitarian disasters when provoking natural catastrophes: whatever challenges the water issue raises, the most affected are always the most vulnerable people.

2.1 billion human beings do not have access to safely managed domestic drinking water. Population growth increases the pressure on the resource and extreme climate events are more and more frequent. Today, water is more than ever a global challenge: a common good to share, a vital resource to sustainably manage, a human right to uphold.

With this document, Ideas for Development gives a voice to ten experts who are mobilized, on a national or a global level, on water issues and challenges. Fight for a universal access to drinking water and sanitation, anticipation of extreme shortages, reduction in inequalities, adaptation to climate change, technologic innovation, hydro-diplomacy...

Even though the challenges are enormous, works and actions of women and men featuring in the following pages demonstrate every day that solutions do exist. They all unanimously agree on one point: only a strong commitment of the international community and proactive public policies will improve resource management and conservation, mitigate the impacts of climate change and make the right to water a reality.

Sharpen your vision of development with the ID4D blog, coordinated by the Agence française de développement:

ideas4development.org



“Access to drinking water and sanitation is a fundamental human right”

AN INTERVIEW WITH



CATARINA DE ALBUQUERQUE

First UN Special Rapporteur on the Human Right to Water and Sanitation from 2008 to 2014

Catarina de Albuquerque was the first UN Special Rapporteur on the Human Right to Water and Sanitation from 2008 to 2014. She is now Executive Chair of the global partnership Sanitation and Water for All. After having contributed to the recognition of access to water and sanitation as a fundamental human right, she is today concerned about seeing that the most disadvantaged populations are still left behind and that public policies take up this right far too little. For Catarina de Albuquerque there is no doubt: it is impossible to regulate access to water without binding public policies.

Why did access to drinking water only become a human right in 2010?

If the Universal Declaration of Human Rights (UDHR) of 10 December 1948 mentions all rights except the right to water, it is because access to water was taken for granted by the negotiators of the text, who were diplomats from wealthy families in

developed countries, where the lack of access to water was not really apparent. At the time, the water crisis was especially blatant in the poorest countries, which were colonies and therefore did not have a seat around the table. Furthermore, civil society organizations, which today influence the debates at the United Nations, were virtually absent from the UDHR negotiations.

It was only in 2005 that Germany and Spain pushed for the opening of discussions on a right to water, even before the creation of the United Nations Human Rights Council. The two countries subsequently proposed the creation of a mandate of Special Rapporteur to analyze the possibility of recognizing this right. So, I was appointed and I worked to have this right recognized. Bolivia, which was very interested in the recognition of a right to water at the time, took up the issue. I persuaded the Ambassador of Bolivia to the United Nations in New York to include not only the right to water, but also the right to sanitation. On 28 July 2010, the United Nations General Assembly adopted the resolution making access to drinking water and sanitation a fundamental human right. This was an essential step and one of the happiest days of my experience as a Rapporteur!

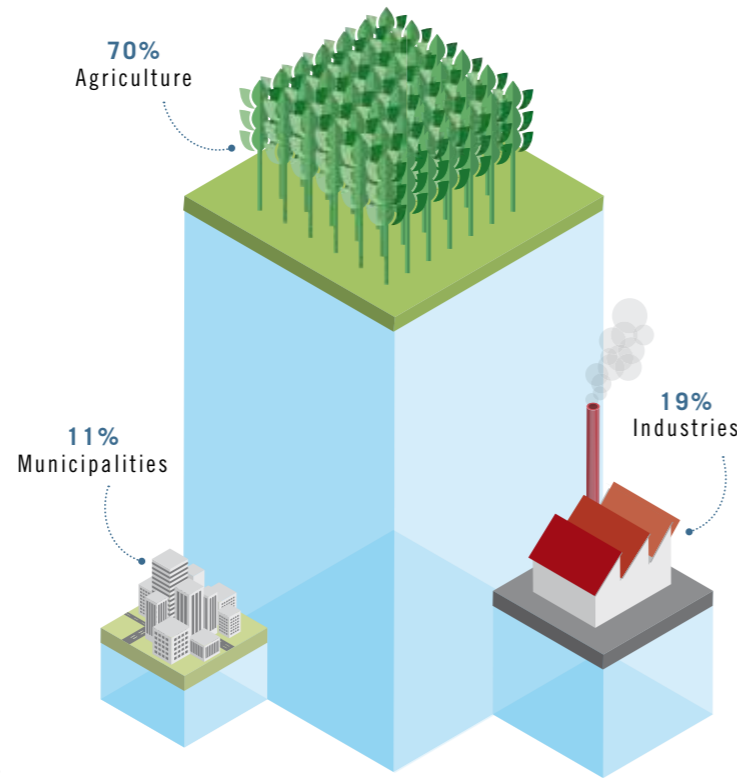
Is this recognition mainly symbolic or can it bring about a real change?

“Making access to water a right means it must be affordable, accessible, of good quality”



Kinshasa, DRC. Pipe operators are recruited among inhabitants by water users associations, responsible for the good managing of water fountains.

DISTRIBUTION OF WATER CONSUMPTION AROUND THE WORLD



Source: United Nations World Water Development Report 2017, UN Water

It is first and foremost symbolic, but I do, of course, hope that it will have more far-reaching effects. It has already influenced the Sustainable Development Goals (SDGs) and has even led to the adoption of an independent goal on water and sanitation set out in the 2030 Agenda. I fought to make sure that it was not limited to a simple declaration of good intentions. It was absolutely essential that the normative content was included in the SDGs. Making access to water a right means that it must be affordable, accessible, of good quality, etc. Furthermore, did you know that the only human right explicitly recognized and mentioned in the 2030 Agenda is precisely the right to water and sanitation? This is the result of the battle I waged with hundreds of civil society actors. These rights have now been taken into account in constitutions and national plans. People make claims about them in national courts. The world is changing. Some headway is being made. The situation is, however, far from being perfect.

How can we account for the current water crisis?

The quantity of available water today is the same as the quantity available at the time of the dinosaurs. The first difference is that there were fewer dinosaurs than there are humans. The second is that in their time, there was no tourism, agriculture or industry. Yet agriculture consumes 70% of the fresh water available and industry 19%. It is essential to educate the population by explaining that water is a scarce and valuable resource, but it does get on my nerves when some try to lay all the blame for the water crisis on individuals! Households have more swimming pools, showers, washing machines, dishwashers, etc., but the major problem is not related to domestic use. The quantity of water available per capita is admittedly

falling. I also do not deny the impact of climate change. But we know that there is enough water on the planet to ensure access to it for all. The problem lies in poor public policies and the significant lack of regulations, which are, however, essential in order to prioritize the various water uses. For example, in the event of a crisis, will priority be given to human consumption or to watering golf courses? Or to the irrigation of huge agricultural crops intended for export?

“There is enough water on the planet to ensure access to it for all. The problem lies in poor public policies and the significant lack of regulations”

“We need laws, public policies and regulations to encourage agriculture, tourism and industry to make efforts to save, recycle and reuse water”

Why do you talk about poor water management?

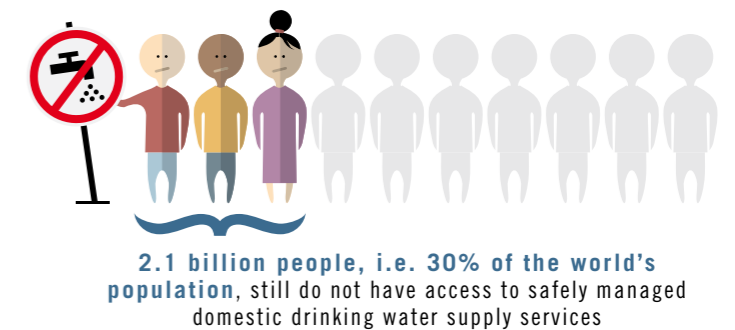
Firstly, there is a huge lack of investments in the maintenance of water systems. For example, in the USA, the situation is tragic. The equipment is dilapidated, never repaired, and there are huge losses recorded. Secondly, certain tariff or subsidy systems have adverse effects. The example of Jordan clearly illustrates this: the Government maintains substantial subsidies for water for agriculture, as it is a major source of foreign currency for the country. But the adverse effect of these subsidies is that they have encouraged farmers to consume a lot of water in one of the countries in the world where there is the least water. The Government is now making efforts to promote water-saving crops, but priorities are changing very, or even too, slowly.

In the tourism sector, we see that it is only when the price of water increases that hotels invest in water-saving taps or water recycling systems. For example, in Las Vegas, which is located in one of the most arid regions in the USA, very binding tax policies have forced hotels to drastically reduce their consumption, while ensuring that the city’s tourism revenues are maintained. In Japan, certain buildings have been equipped with dual pipe systems: the water used for the shower does not go down the drain, but is reused for toilet

flushing. In Singapore and Australia, water recycling is also being developed: recycled water goes back into the drinking water system and is safely drunk by people. We need laws, public policies and regulations to encourage agriculture, tourism and industry to make efforts to save, recycle and reuse water. People have a responsibility, but it is especially governments which have the duty to adopt appropriate legislation.

How do you account for the deficiencies in public policies?

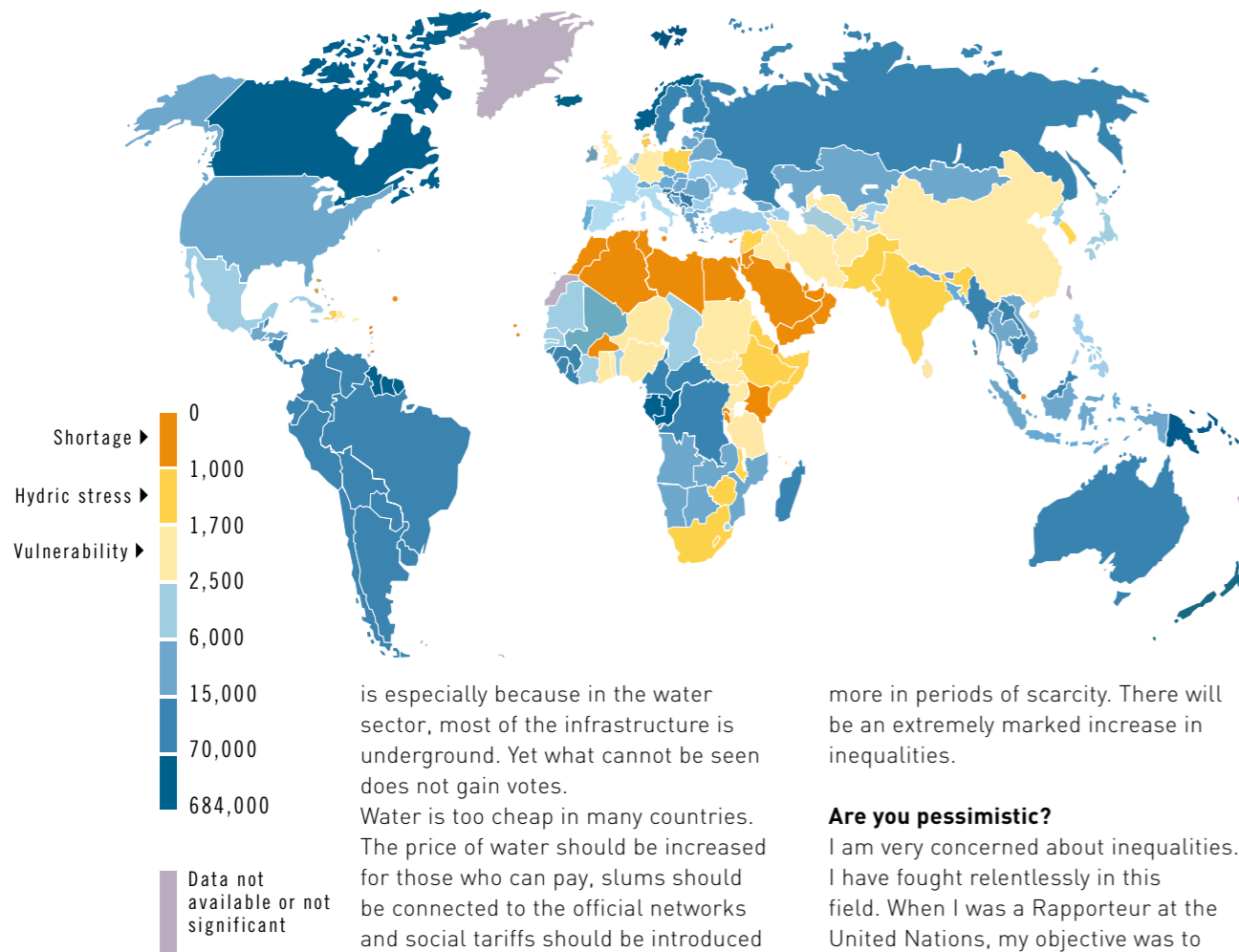
The lack of good public policies is sometimes due to a lack of knowledge or competence by governments. However, the main reason is that it is difficult to win elections by promising to adopt this type of measure for water management. It is a subject which can be difficult to sell electorally. This



Source : Unicef

FRESH WATER AVAILABILITY IN THE WORLD

cubic meters per person and per year, in 2007



is especially because in the water sector, most of the infrastructure is underground. Yet what cannot be seen does not gain votes.

Water is too cheap in many countries. The price of water should be increased for those who can pay, slums should be connected to the official networks and social tariffs should be introduced for the most vulnerable. This would establish a fair system accessible to all, while avoiding wastage. But the increase in water tariffs can bring about revolutions and few politicians are willing to take this risk. However, if the Minister of Water is smart, he can have a lot of success and maybe even become Prime Minister!

What are the future challenges?

Today, over two billion people lack drinking water. Every year, millions of people die from diseases related to unsafe water. With the ongoing climate change, there will be less and less fresh water available. The real tragedy is that the aggravation of the water crisis will first and foremost affect those who are already the most disadvantaged. Those who suffer in times of abundance will suffer even

more in periods of scarcity. There will be an extremely marked increase in inequalities.

Are you pessimistic?

I am very concerned about inequalities. I have fought relentlessly in this field. When I was a Rapporteur at the United Nations, my objective was to include this theme in the SDGs. We succeeded. For this recognition to serve a purpose, it has to be taken into account and we have to change the way we work. Unfortunately, I do not see any changes. We cannot simply say: "Almost everyone has access to water." This "almost" is not good enough for me. This "almost" means that we are continuing to ignore the poorest, people who belong to an ethnic, linguistic minority, etc. If we do not identify the most marginalized (the homeless, migrants, refugees) and if we do not implement special public policies to reach them, we will never achieve a rate of access to water of 100%. Yet 100% of human beings with access to water and sanitation is what all the Heads of State and Government pledged to the world in September 2015. •

Sources: FAO, United Nations, World Resources Institute (WRI)

“Day Zero” is scheduled for July 9th in Cape Town

AN INTERVIEW WITH



XANTHEA LIMBERG

Cape Town Councillor in charge of the Mayoral Committee overseeing Informal Settlements, Water & Waste Services, and Energy.

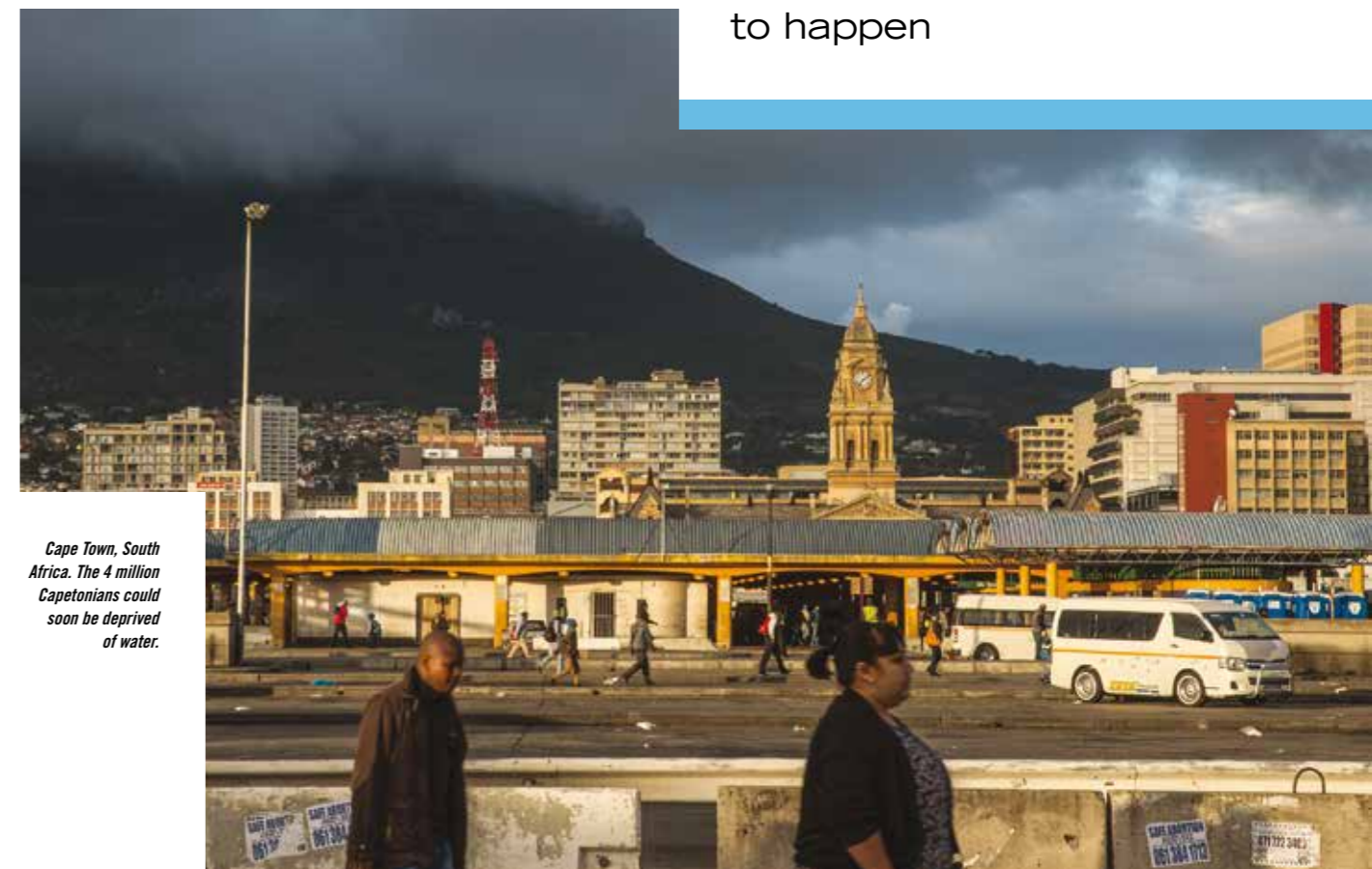
Cape Town, the second largest city of South Africa and very popular with tourists, is struck by a severe drought since 2016. Led by Mayor Patricia de Lille from the Democratic Alliance, municipality took strong measures to restrict water consumption. The city is also preparing for a “Day Zero” scenario, the day when the taps run dry and some 200 water collection sites provide water for 4 million inhabitants. Yet, the City is not waiting for the catastrophe to happen: several projects will produce 200 million more litres of water in the current year, explains Xanthea Limberg, Cape Town Councillor and Chair of the

Mayoral Committee overseeing Informal Settlements, Water & Waste Services, and Energy in February 2017.

Why was the decision taken to set limits for water consumption per household in Cape Town?

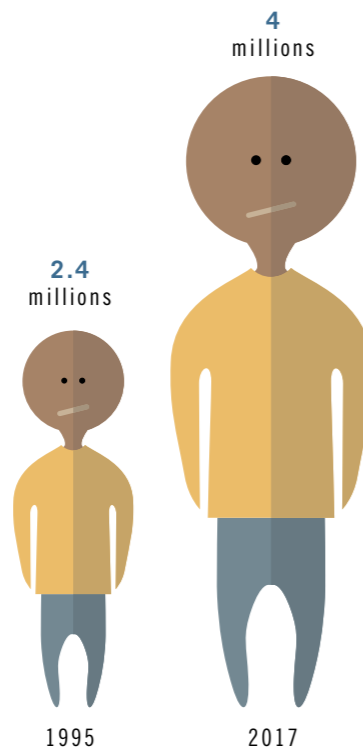
For more than a decade, the City demands water restrictions as part of water conservation policies because of the drought affecting the region and of the increasing urbanization due to a constant influx of new dwellers from

The City is not waiting for the catastrophe to happen



Cape Town, South Africa. The 4 million Capetonians could soon be deprived of water.

**POPULATION
IN THE CAPE TOWN
AREA**



Source: Western Cape Province.

rural areas of the neighbouring poorer province of Eastern Cape. Many white households also leave Johannesburg and the richest and industrialized Gauteng Province because of the perception of levels of crime. Cape Town is internationally recognized for its efforts in water management. The “Mother City”, as people call the second largest city after Johannesburg, has the lowest water use per capita amongst big cities in South Africa. This policy is ensuring we can still reduce our demand in order to save the water resource still within our six dams. We have implemented level 5 water restrictions in September, restricting the water use to 87 litres per person per day. Level 6 was implemented in January and level 6B on February 1st. Currently, the water use is set to no more than 50 litres per person per day.

How difficult is it to implement the restriction measures?

The municipality has a Water Department with an inspectors’ team that goes out and respond to the water complaints they receive. We have launched a campaign to encourage people to report abuse: if you see your neighbours watering their gardens with a hosepipe connected to a municipal line, for

instance, you can tell the city. Our inspectors will come and issue a fine going from 5,000 up to 10,000 rands (340 to 680 euros). The fines are set by the Municipal Court, depending on the severity of the offence or if it has happened more than once. On the last quarter of 2017, 400 fines were issued. As the numbers escalate, we will have to increase the capacity of our water inspectors’ team. The situation demands further restrictions. As Mayor Patricia de Lille said in December, 200,000 out of 707,800 households are not respecting the city restrictions. Devices controlling water management are being installed on some properties. In January, our municipal council has decided on a new set of measures hoping these

will change behaviours. The principle is simple: if you use more water, you will pay more for it. We are also looking at reducing the pressure level of water coming out of the taps; less pressure means water savings. Finally, a water levy is being discussed to enable the City to finance water augmentation projects, implying to produce water and to increase the capacity of our aquifers. Our plan is that the 464,000 richest households pay for it, with the 52,000 wealthiest at a rate above 150 rands (€10) per month

Cape Town, South Africa. Inhabitants of the rehabilitated informal settlement of Flamingo Crescent now have access to water and toilets.



and the majority less than 47 rands (€3,2) per month.

If the current drought persists and the current restrictions are not respected, how seriously are you preparing the “Day Zero” as a catastrophe scenario?

If our consumption of water remains at the current level of 6 million litres per day, “Day Zero” is scheduled for July 9th! All the municipalities around Cape Town and the agricultural sector draw water from the same set of dams. Hence, we, as an entire province, need to reduce our consumption. That is why the city is focused on massively doing so. “Day Zero” is not when Cape Town runs out of water, but when our dams reach a level of 13,5% – meaning nearly empty – with no possibility to normally provide water to the city. The level as of January was 29,7% with only about 19,7% of useable water left. If “Day Zero” happens because of the non-respect of the current restrictions, we will then have to manage carefully and efficiently some time with a strict use of 25 litres of water per day and per capita, until the rains refill some of our aquifers (rain season starts with the austral winter in June, editor’s note).

As a responsible local government, we are attempting to avoid “Day Zero” but we have to prepare for any eventuality. If Day Zero happens, the alternative plan is to set 200 water collections sites, in order to deliver 25 litres per person per day on a 24h/24h basis. A large portion of Cape Town will depend on water collection sites, but some sectors will be excluded from that policy, such as informal

“If “Day Zero” happens [...], we will then have to manage carefully and efficiently some time with a strict use of 25 litres of water per day and per capita”

settlements – where communities already use communal taps as a water collection site -, clinics and hospitals, and the Centre Business District (CBD) to make sure that key businesses and the economy still work. We are also looking at expanding water collection points through partnership with the private sector in order to use

**TOP 10
CITIES FACING WATER
DEFICIT BY 2050**

Because of aquifers affected by climate change and, urban and socioeconomic development

Source: Nature Sustainability, vol. 1, pp. 51–58 (2018)



Make water and sanitation a central humanitarian issue



WATER STRESS IN AFRICA
in 2025

Water shortage in 2025 (less than 1,000 m³/hab./year)

Water stress in 2025 (1,000 to 1,700 m³/hab./year)

Source: UNDP

under construction in Strandfontein will deliver 7 million litres of water per day. In a first stage, it will give 2 million litres per day and as of May 5th more million litres per day.

We are also trying to maximize our aquifers, a source of water that will produce 100 million litres from 2020 onwards, if well managed.

According to a ground water survey conducted in 2016, at least 150 million litres of water per day can be delivered by the Cape Flats, Table Mountain Group and Atlantis aquifers.

The city has moved drill rigs onto the sites to get more water, and allocated more resources to drill underground in a sustainable and environmental-friendly approach.

Are the tourists prepared for water restrictions?

Everybody needs to comply, even if the key operations in the CBD will still be connected to water from taps. This includes foreign visitors, 1.5 million people in 2016, and South African tourists, 2.1 million people the same year according to South African Tourism statistics.

We have launched in October 2017 a "Tourist Saving Water" campaign. Our message is that you can still come to Cape Town and explore its wonders and beauty, but remind you need to save like a local to what was then our Level 5 restriction plan, 87 litres per day. We have had advertisements at the International Airport and we communicated with the hotel industry and tourist agencies so that the message can be shared. •

their infrastructures. Water collection could also be done through grocery stores, where you can collect your 25 litres per day and pay for them at the normal public rate. Finally, a disaster management plan has also been coordinated with the province of Western Cape, the police and the army to minimize any abuse and maintain law and order around the water collection sites.

Beyond 2018, how will you manage the situation in the middle and long term?

In the long term, many projects are on the way to maintain and increase our water supply. Such as desalination plants, possible on our site since Cape Town stands along two oceans, the Atlantic and the Indian Ocean. The first of the three temporary plants currently

AN INTERVIEW WITH



JEAN LAPEGUE

Senior Water-Sanitation-Hygiene Advisor of the NGO Action contre la faim (ACF)

The humanitarian action and development agendas are complementary and interdependent. Their issues consequently need to be addressed in a coherent manner. According to Jean Lapègue, in addition to woefully lacking financing, the water and sanitation sector is not sufficiently taken into account in humanitarian operations and development projects. His objective at the World Water Forum: make sure these issues are central to the discussions of governments, development agencies and civil society organizations.

What are you expecting from the 8th World Water Forum, which is being held in Brasilia in March 2018?

Action contre la faim (ACF) advocates for the humanitarian approach to have its place in symposiums concerning

development, especially the World Water Forum. It is also essential for the situation of the most vulnerable to be a strategic and financial priority for governments. Indeed, humanitarian needs around the world have reached an unprecedented level: according to the United Nations, in 2017, over 140 million people in 37 countries required immediate assistance.

From the development perspective, according to the World Health Organization (WHO), in 2015, 663 million people still did not have access to an improved water source. 319 million of them, i.e. 48%, live in Sub-Saharan Africa. In addition, almost a third of people worldwide do not benefit from real access to sanitation. The World Water

Forum should serve as a reminder that dealing with people in crisis situations is a priority, because they are the first to be affected by the lack of access to water, sanitation and hygiene. Last year, ACF provided its services to some 6 million people. 40% of them were in an acute emergency situation. That is a lot, but, without wishing to play on words, it remains a drop in the ocean of needs!

What issues will you be addressing at the World Water Forum?

ACF will be focusing on the link between

“It is essential for the situation of the most vulnerable to be a strategic and financial priority for governments”

water, sanitation, nutrition and public health. Indeed, public health issues remain highly dependent on the health environment of populations. Every health centre needs to be equipped with water and sanitation and to be able to treat waste (particularly medical waste). This is essential.

We also promote young professionals who are active in the water sector. The young generation is the generation which has grown up with the SDGs. In practical terms, we are going to ensure that a sufficient number of young people can attend the Forum, contribute to the various processes (including the ministerial declaration) and express their point of view, which is often innovative and revolutionary.

What is the main barrier to action for access to water?

The recognition of the right to water in July 2010, the definition of a dedicated

Sustainable Development Goal (SDG) in September 2015, etc.: the sector is moving fast. But this substantial progress requires a greater capacity for implementation, in particular for the SDGs. At the global level, over twenty UN agencies are involved in the water sector. But three factors are essential to ensure more effective coordination: a single recognized and strong agency in charge of coordinating the sector, an interministerial platform to allow concerted sectoral discussions, a multi-stakeholder consultation platform to assist governments in the implementation of the SDGs. These three recommendations were made by the United Nations Secretary-General's Advisory Board on Water & Sanitation in November 2015 and are still relevant and supported by ACF.

Does the World Water Forum not indeed provide a good opportunity for interministerial discussions?

It does, indeed, play this role by default, but everything depends on the good will of the ministers who are present, because the framework of the Forum and its political process leading to a ministerial declaration of intent are not binding and are not placed under the auspices of the United Nations. The World Water Forum does, however, provide a major opportunity for advocacy for the coordination of the water sector and also a real opportunity for discussions between countries and stakeholders, with a view to a harmonious implementation of the SDGs.

Why is there less interest in sanitation than in water?

Besides the issues of image concerning waste and excrement, the sanitation sector is affected by various constraints. Firstly, access to water, which is more easily perceived as a vital and immediate need, is systematically given priority over access to sanitation. There are

also operational constraints: sanitation, unlike water, which can be distributed collectively, must in most cases be individualized at the household level, which makes its installation complex and costly.

There is also a significant financial constraint. The sanitation budget is often chronically lower than the budget devoted to water (58%), which gives an indication of how sanitation comes second in priorities. In 2016, 42% of the total budget devoted by governments to the water-sanitation-hygiene triptych was earmarked for sanitation. Finally, sanitation does not yet create sufficient strong and replicable economic

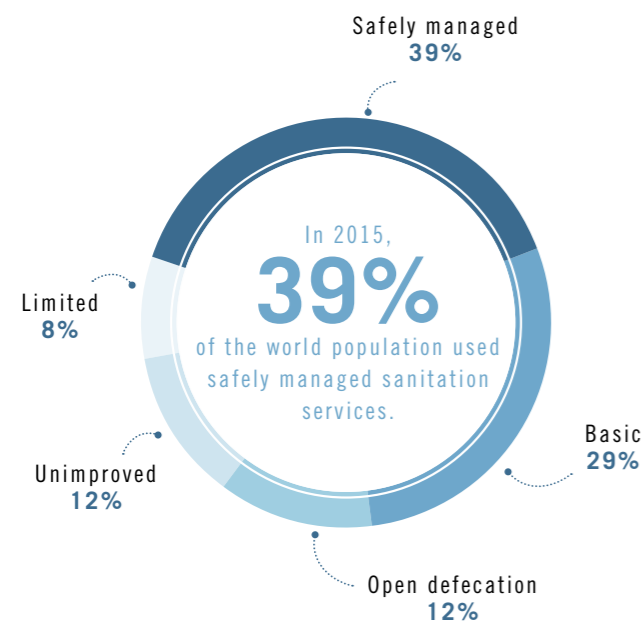
“Water channels less than 4% of global Official Development Assistance (ODA), i.e. some US 8 billion dollars a year”

opportunities, despite a few promising examples, such as the recovery of excrement for compost or waste sorting to create income-generating activities. The water sector generates an economic interest and attracts financing, while sanitation remains a financial drain. All this contributes to this subsector lagging behind, a lag which is exacerbated in rural areas, where only 24% of sectoral financing is allocated to sanitation.

Can you give examples of countries where water and sanitation management are great emergencies?

The indicators for access to the service are critical in Burkina Faso: in 2015, only 54% of the population had access to water and 2% to sanitation at national level and these rates stand at 43% and 12% in rural areas. But the country is

SANITATION IN THE WORLD



Source: Progress on drinking water, sanitation and hygiene: 2017 update and SDG baselines, JMP Washdata.



Shohila, Bangladesh. Six months per year, during floods, inhabitants live almost in autarky in the inundated village.

showing a real political and strategic will to achieve the SDGs, in particular via the implementation of a decentralized sectoral policy.

Senegal is also a good example in terms of policy decisions in the sector. The next World Water Forum will, moreover, be held in this country in 2021. We can also mention India, a country with the record rate for open defecation (597 million people in 2014, according to Unicef). However, the problems of sanitation are so critical in this country that there has been growing political awareness and major commitments have been made at federal level.

Finally, countries affected by chronic crisis situations (Somalia, Afghanistan, Southern Sudan, etc.) are logically those which have the most difficulties in making progress in access to water and sanitation. These issues become secondary priorities and come after security. They also suffer from the typical corollaries in conflict situations: lack of access to territories, corruption, poor governance, absence or non-application of the legal framework, drain on human resources and technical capacities, gradual disappearance of the private sector, etc.

As of access to water, should we worry more about climate change or about conflict situations?

Even if certain conflicts are directly related to competition over water resources (Sri Lanka or the Gaza Strip), in reality, there are more conflict situations which lead to problems of

“In reality, there are more conflict situations which lead to problems of access to water than the other way round”

access to water than the other way round.

Climate change is a major concern. In Sahelian zones, it is a pervasive and real problem. Similarly, in the Middle East (Jordan, Iraq) and Southern Africa (Madagascar), the decline of groundwater is tangible and documented. The inevitable consequences are known: displacement of populations and increase in the cost of infrastructure, which must be adapted to a resource that is increasingly scarce and more complicated to locate. Geophysical surveys are systematically conducted and telescopic wells are becoming more and more common.

What do you expect from donors?

First and foremost, more financing is needed. It is easy to observe the low level of financing in the sector in humanitarian situations. We just have to look at the fact that in 2017, the United Nations Office for the Coordination of Humanitarian Affairs launched a global appeal for funds in order to reach the 101.2 million most vulnerable people. Out of a total need of US 23.5 billion dollars in all sectors taken together, 26% was covered, i.e. only 6.2 billion were raised. The water sector is still underfunded, both in terms of development and emergency situations. Water channels a total of less than 4% of global Official Development Assistance (ODA), i.e. some US 8 billion dollars a year, and this has been plummeting for 5 years. Financing in the water sector in humanitarian situations also accounts for less than 5% of total aid. This is critical, especially considering the fact that the first disaster response interventions are generally actions in the water and sanitation sector. Finally, what we expect from the main multilateral institutional donors is more flexibility to allow integrated and multi-sectoral projects to be supported, for example, projects which link water and nutrition. •

GEOPOLITICS



Palestinian Territories. Without water or sanitation, health conditions are precarious.

Hydro-diplomacy to prevent the militarization of water-related conflicts

AN INTERVIEW WITH



FADI GEORGES COMAIR

Water diplomat and international negotiator, Middle East specialist

Access to water still causes conflicts between those who share or fight over access to the same source.

These tensions are even more serious, or even explosive in regions where water resources are scarce. This is the case on the shores of the Mediterranean and all countries in the Middle East. There is a risk that they will be further exacerbated in the future by the consequences of climate change. For Georges Comair, a water diplomat, countries in the region

need to establish specific negotiation processes on water issues and anticipate the increase in water stress and its consequences.

Are water-related conflicts on the rise in the Middle East?

All the causes of vulnerability are to be found in the Middle East! First of all, 60% of water in countries in the region comes from external countries. Secondly, the region is experiencing strong population growth, at a rate

of about 3.8% per year. Finally, the quantity of water available per capita is low: 700m³ per capita per year in the Middle East, against an average of 7,000m³ per capita per year worldwide. Consequently, all the ingredients are there for conflicts. At the same time, we have established major dynamics to promote dialogue between States.

What are these tools which promote cooperation and sustainable water resources management?

The UN texts, which I call "anti-crisis" texts, are there to build cooperation and peace and secure water for future generations.

Countries with transboundary basins will need to transfer information, exchange their databases, model the impact of climate change affecting these basins by conducting technological audits, and propose adaptation plans. This is without forgetting that the countries upstream from watercourses will need to ensure that they do not cause harm to countries located downstream. In the transboundary basins in the Middle East, international legislative and regulatory texts are increasingly being used. For example, the 1997 United Nations Convention advocates for the

equitable sharing and reasonable use of water – a text which was ratified by all countries in the region, with the exception of Israel and Turkey. The texts of the United Nations Economic Commission for Europe (UNECE) can also be taken as an example. The management of the Danube is, for instance, exemplary: all the countries which share the river negotiate and work together. This management model can be applied in the Middle East. The management of the Orontes River was the first success of hydro-diplomacy in the Middle East.

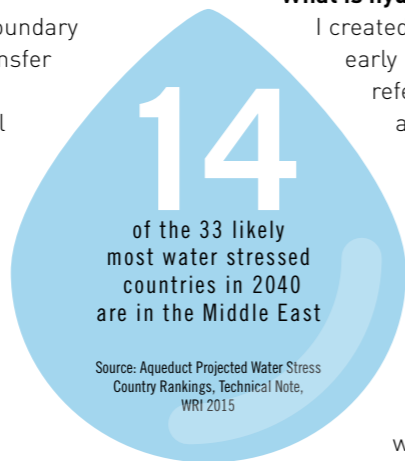
What is hydro-diplomacy?

I created this concept in the early 1990s. Hydro-diplomacy refers to the fact of getting all stakeholders in water management around the table in the context of a new governance. The aim is to promote the economic and social benefits for transboundary basins and work on preventing the militarization of water-related conflicts.

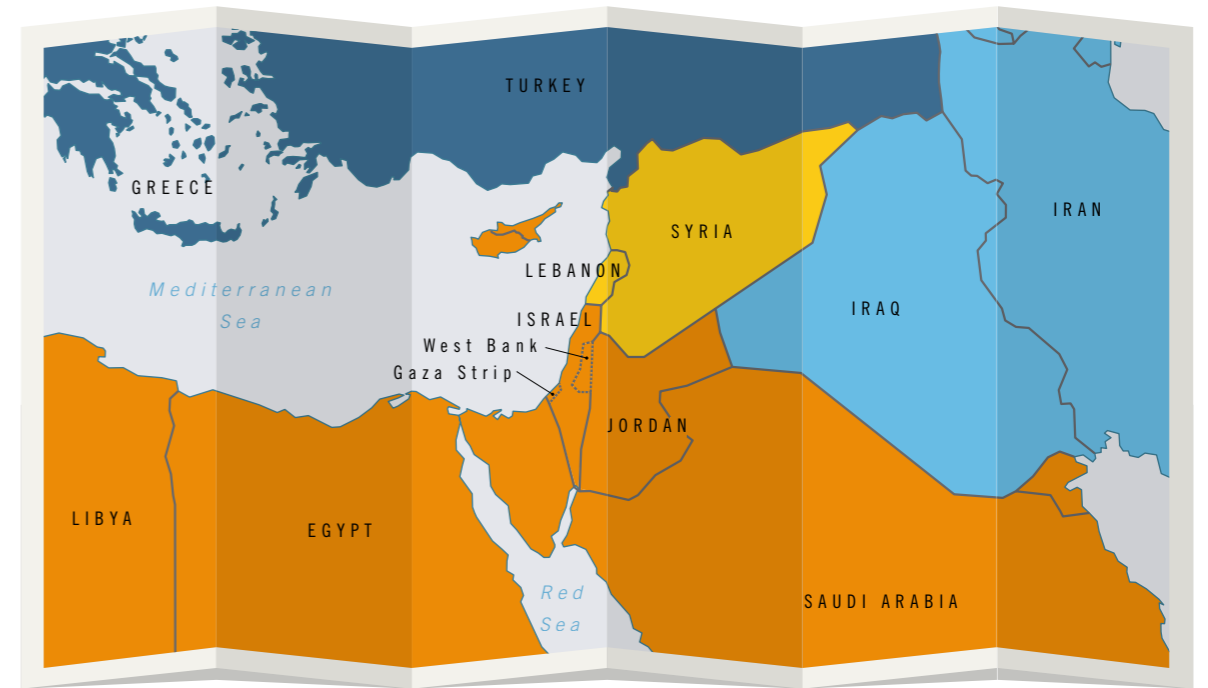
I have applied this concept in the basin of the Orontes River, which originates in Lebanon, crosses Syria and flows into the Mediterranean. According to Unesco, the win-win agreement signed between Lebanon, Turkey and Syria is a model for water management in the Middle East. I have also applied it in the context of the Jordan River crisis, which affects Palestine, Lebanon, Israel and Jordan. For the Nile, we will need to establish an extremely dynamic hydro-diplomacy!

Indeed, what are the current areas of tension in the Middle East?

There are many inter-State issues over water. For example, the Tigris and the Euphrates cross Turkey, Syria and Iraq. Water from the Jordan River is shared



700m³ of water per year are available to a Middle East inhabitant. It is almost 10 times less than the world average.



between Palestine, Jordan, Syria, Israel and Lebanon. Israel decided to occupy the Palestinian Territories to secure its access to water. This hegemonic domination causes water and military conflicts. The Red Sea-Dead Sea project might break the deadlock in this situation. This canal between the Red Sea and Dead Sea will supply additional desalinated drinking water, which will be equitably distributed between Jordan, Palestine and Israel. The Nile, for its part, concerns the two Sudans, Eritrea, Ethiopia and Egypt. Once it has been completed, the Grand Ethiopian Renaissance Dam will be the largest hydropower dam in Africa and will store approximately 80% of the water from the Nile. There will be serious consequences for food security in Egypt, whereas the country is already faced with increased droughts and major demographic pressure. Conversely, the dam will secure Sudan's energy needs. Consequently, it is not only water sharing that is at issue, but also the food and energy security of countries. The sectoral approach alone is no longer sufficient to work on water issues.

What is the role of Basin Agencies?

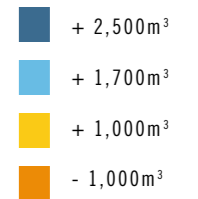
The concept of basin agencies came about in France in the 1970s. It was extended to Europe in the context of a

European Framework Directive, which came into force in 2015. The principle involves getting riparian countries of a watercourse together to agree on a regulatory text (UN, European, Middle Eastern...) and organize an equitable sharing of water and its reasonable use. The creation of a basin agency comes with three major questions: What governance should be adopted? What Water Code should be used? And what legislative text should be used in the event of dispute? Governance is a central issue. Riparian countries can opt for a Basin Commission, which is only composed of technicians, or for a Basin Agency, which is more broadly composed of politicians, researchers, industry leaders, farmers... In the latter case, water demand management takes into account comprehensive plans for adaptation to changes, with measures concerning floods, droughts, the transfer of populations, etc.

Apart from water sharing, what problems can Basin Agencies provide a response to?

Basin Agencies can address problems related to agriculture, the efficiency of networks and financing structures. For example, in the Middle East, the agricultural sector is a huge water

WATER SCARCITY IN THE MIDDLE EAST
m³ per capita per year



Source: Le Dessous des Cartes

“In most cases, wars are not fought over water”

consumer and its irrigation methods need to be changed. But how to finance the necessary technological change?

The lack of efficiency of drinking water networks is also a central issue. In the Middle East, there is a 40% loss rate on drinking water supply networks due to leaks, against 10% in Europe. How can they be stopped and service quality be improved for citizens?

Consequently, the question of financing is central to the water issue. Financing can be provided by systems of donors, creditors (World Bank, European Investment Bank, etc.), or by private financing in the context of public-private partnerships with regulatory agencies. This can finance the construction of infrastructure, such as wastewater treatment plants, which are essential in preventing water in countries downstream from being polluted by countries upstream.

How is global warming threatening Middle East?

The Middle East is one of the first regions affected by global warming. According to the modelling of climatologists, a temperature rise of two degrees will have an impact of 30% on rainfall over the next ten years. Faced with the coming shortage, farmers will leave increasingly arid areas and settle on the Mediterranean coasts. Rural areas will consequently lose their populations to large cities. In addition, the presence of these climate refugees will further increase

“We need to train senior officials, educate young generations to ensure they understand that water is the condition for their survival”

water stress, as is currently the case in Lebanon, with the 2 million Syrian refugees.

The water shortage will also increase the security threat: the strongest countries will impose their hegemonic management on the weakest countries and conflicts will intensify.

Finally, this increased scarcity will cause an economic and environmental shock. The economies of countries will be affected and river ecosystems will change: there will be fewer green areas, less flora, less fauna. This will also have a number of consequences.

The Paris Pact on Water and Adaptation, signed in 2015, provides for water data to be shared so that we can understand how aquifer resources will be affected by global changes and develop common responses. This type of framework does not exist in the Middle East. For the time being, the creation of a Mediterranean Water Agency has not been able to materialize for diplomatic reasons. But the negotiation is going to resume in the context of the “5+5” Dialogue, which I have the honor of chairing.

What are the emergencies?

Without hesitation, political will! Without dialogue between riparian countries, without active hydro-diplomacy, conflicts will increase.

The second need is education, as it is the basis of sustainable development. We need to train senior officials and educate young generations to ensure everyone understands that water is the condition for their survival in this region and that wastage has dramatic consequences on supply. The population has a role to play!

Finally, the third emergency is to work on the water-energy-food triptych, in the context of a regional body, in order to reduce the energy cost of water and promote sustainable resources management.

And only good governance will make all this possible. •



AN INTERVIEW WITH
**STEPHEN
MCCAFFREY**

Distinguished
Professor of Law,
former International
Law Commission's
Special Rapporteur
on international
watercourses

Management and sharing of waters often provoke conflicts in the world. Or more accurately, awake underlying tensions between States sharing the vital resource. For Stephen McCaffrey, lawyer specialized in watercourses management, zones of hydroconflicts exist but conflicts there are not only related to water. A look on international management of water and water conflicts.

When did water become a scarce resource?

The amount of water on Earth has been the same for billions of years and is not likely to change. What has changed is the planet's human population. It has multiplied many times even only since even the mid-20th century.

In the second half of the 20th century, water specialists and international organizations, such as the United Nations, began to realize that the amount of water per capita was decreasing sharply. And the link between water-borne diseases and poor (or no) sanitation also were better understood during this period.

Perhaps oddly, severe famines during this period, such as that in Ethiopia, received much coverage in the media, but were actually, for the most part, brought on by droughts that prevented growing crops. So, water scarcity was manifested in food scarcity. Finally, it must be said that we have much better information now than we did fifty years ago on these matters.

What is the extent of the water crisis?

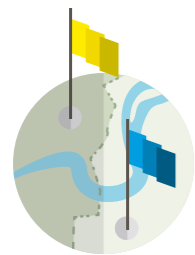
It is estimated that 700 to 800 million people lack sufficient clean drinking water. The water crisis concerns water pollution, over-use of rivers and lakes, depletion of underground waters. Internationally, problems often arise when one State sharing a river with another State changes the way it uses the water. It can be by building a dam, diverting some of the water for irrigation purposes or allowing new industrial activities to discharge their waste into the river.

What is the peculiarity of water compared to other resources?

Water is characterised by more complicated problematics than other natural resource issues: it is vital to human life and is also used for a wide range of purposes, from drinking and generating electricity to powering mills and irrigating agricultural lands. And it is also essential to the maintenance of a healthy environment as demonstrated by the conclusions of the Kishenganga case which opposed Pakistan to India. The Permanent Court of Arbitration found that India had the right to use the waters of the Kishenganga River for the production of hydroelectric energy, but it must do so while ensuring a minimum environmental flow to protect water resources, even though the 1960 Indus Waters Treaty made no mention of such an obligation.

How are problems of water management dealt with internationally?

TRANS-BOUNDARY WATERS



263 international rivers



145 States' territories are run through or bordered by such international rivers



300 treaties between countries sharing freshwater resources

The legal framework for management of transboundary aquifers and watercourses is reflected in the 1997 UN Convention on the Law of the Non-Navigational Uses of International Watercourses. This treaty is generally accepted as a codification of the rules of customary international law on the subject. There are over 300 treaties between countries sharing freshwater resources, and those treaties often establish their own implementation mechanisms, generally in the form of joint commissions. The implementation of treaties such as the UN Watercourses Convention and other bilateral and regional water agreements will help and bring a sustainable and peaceful management of transboundary waters.

Are water-based conflicts increasing?

Based on the number of disputes submitted to the International Court of Justice, one could conclude that water-based conflicts are increasing. But most water-related disputes are not submitted to the Court, hence this number is only the tip of the iceberg. Only two cases (River Oder, 1929, and Meuse, 1937) concerning the use of shared freshwater resources had been submitted to the World Court until the 1990s. After 1997, year of the Gabčíkovo-Nagymaros Project case opposing Hungary and Slovakia, there had been a succession of cases, concerning various aspects of the use of rivers through which, or along a bank of which, borders run between countries (Navigational and Related Rights, 2009, Pulp Mills, 2010, Certain Activities, 2015, Construction of a Road, 2015) and dispute over the status and use of the waters of the

“Conflict is always more expensive than cooperation”

Silala (Chile v. Bolivia, 2016) were filed to The Hague. Not counting the important Kishenganga Arbitration (2013).

Can water diplomacy contribute to build peace?

Of course, it can. Because, it is fundamentally in the interest of States to cooperate with States they share natural resources with. Conflict is always more expensive than cooperation and its outcome more uncertain. Cooperation can increase the basket of benefits available to all riparian States, getting away from what is otherwise likely to be a zero-sum game where one's gain is always the other loss. In most cases, wars are not fought over water. Water-based conflict almost always reveals an underlying problem, or problems, between the States concerned, giving rise to tense relations between them, that water or any other trigger can set off.

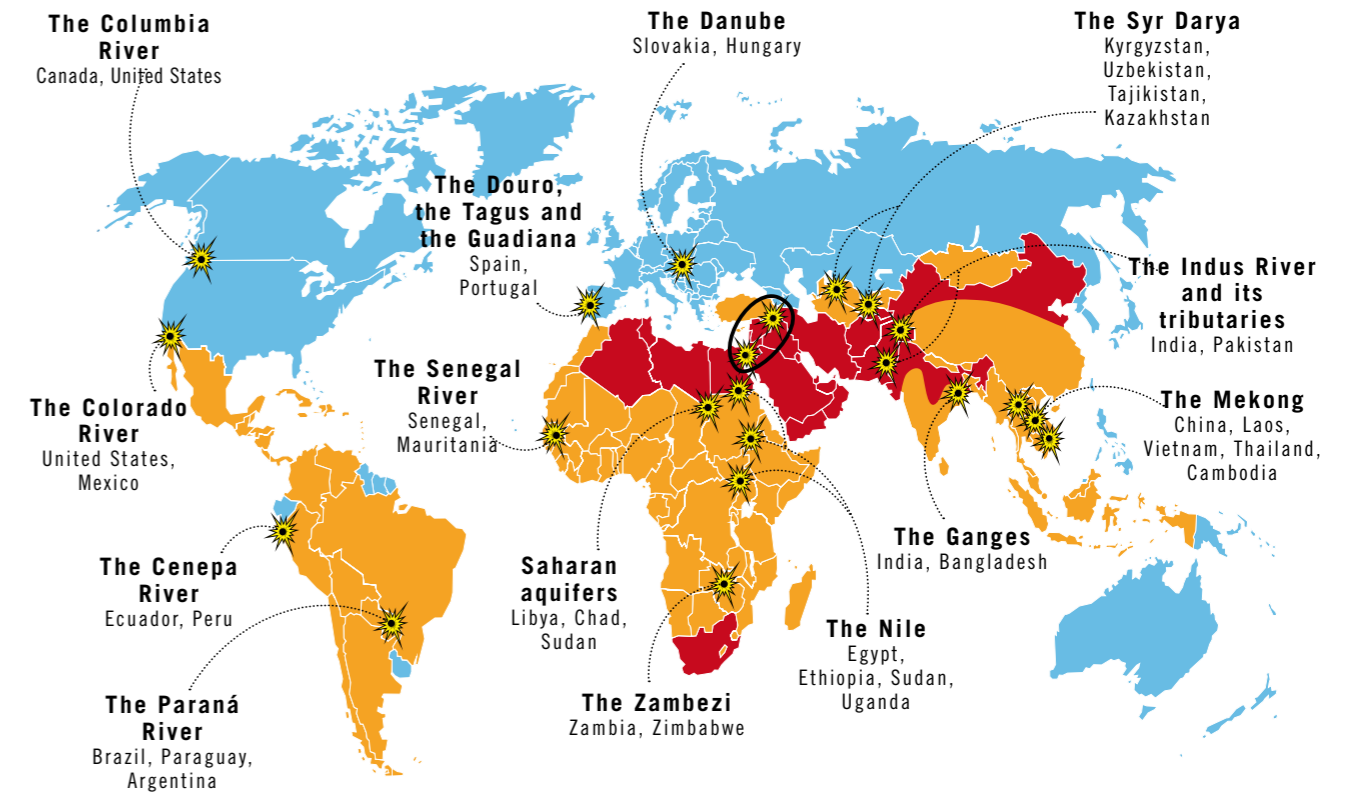
Are there some international examples of successful water management?

Examples of successful water management include cooperative efforts of European countries concerning the Rhine and the Danube, both of which are governed by treaties that establish joint commissions. We can also think of treaty arrangements between the United States and its neighbours, Canada and Mexico, which also establish joint management commissions. However; power asymmetries can skew equality of participation in the management of shared freshwater resources as illustrated by the relationship between Israel and its neighbours, Lebanon, Jordan, and especially, Palestine.

How climate change is aggravating water crisis?

Severely. The Intergovernmental Panel on Climate Change (IPCC) has long predicted that arid areas of the world will become even more dry, while humid or well-watered areas will experience

WATER, SOURCE OF CONFLICTS



unprecedented, torrential rainfall and accompanying floods; and this has been borne out recently. The IPCC has also predict that for each degree of global warming, approximately 7% of the global population is to be exposed to a decrease of renewable water resources of at least 20%.

The uncertainties and changes in water distribution and timing of availability brought about by climate change make it urgent to build regimes for sustainable water management. It will be difficult for even the most advanced countries to cope with these developments alone, and to the extent that shared freshwater resources (including groundwater) are involved, it will be virtually impossible. Thus, cooperation will become even more important as the effects of climate change, already observable, intensify.

In a context of decreasing freshwater availability, how to make a human right to water effective?

A human right to water is not contained in any of the basic human rights instruments. It has emerged, only in

the early 1990s, with the realization that governments were often not doing enough to ensure that their populations had access to safe, clean water. In 2003, the UN Committee on Economic, Social and Cultural Rights adopted General Comment 15, The Right to Water, recognizing that such a right was included in articles 11 and 12 of the ESC Covenant on the rights to an adequate standard of living and health. According to the Comment, the right to water entitles everyone to “sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses.”

The major challenge is in implementation of the right, especially - but not only - in developing countries. International donors, both multilateral and bilateral are supporting the implementation of this right, but it will take time. The difficulties are underscored by the fact that the US State of California, 6th largest economy in the world, recently had as many as 250,000 inhabitants for whom the human right to water was not realized. •

Forecasts for 2025

- Water scarcity
- Lack of infrastructures
- Little or no shortage

Water conflict zones

- High tension, risk of water war
- Disputes over resource sharing et hydraulic installations

Sources: UN, UNDP

GENDER

“Women and men have differential roles, rights and responsibilities”

AN INTERVIEW WITH



SARA AHMED

Independent researcher on the political economy of water, rural development and gender equity in India

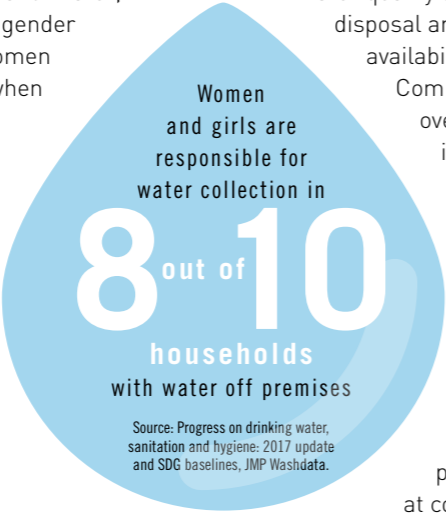
Water and sanitation sector is no exception and makes way for deep inequality between men and women. There is a rising consciousness of the gender inequalities in many fields of development, but gender questions find little resonance in the water and sanitation sectors. Sara Ahmed, researcher and specialist of water, rural development and gender equity, explains how women are at a disadvantage when it comes to water and sanitation.

How is the global water crisis a women’s issue?

Gender equality is at the heart of the Sustainable Development Goals (Goal 5). Likewise, gender intersects with other social relations of power, particularly in the developing world to determine who has access to how much water, when and where.

“Gender intersects with social caste to determine who has access to which water”

Women have diverse water needs including water for both domestic (bathing, washing, drinking, cooking) and productive (agriculture, small enterprises, aquaculture) purposes. Access to water cannot be seen in isolation from access to sanitation and good hygiene, including menstrual health management. And of course, water quality and safe wastewater disposal are as important as availability.



Competition and conflicts over water, particularly in the context of water scarcity or multiple uses from the same water source can impact women differentially, e.g. walking further to collect water for domestic purposes or using water of poor quality. Long lines at community stand posts and fights over water brought by tankers are not uncommon in many semi-arid areas prone to water scarcity. In many parts of the world, gender intersects with social caste to determine who has access to which water. Typically in India, Dalit (lower caste) women often are not allowed to access the village well or if they do, the area has to be purified after they have withdrawn water. Urbanisation and concomitantly, the growth of peri-urban areas has also put pressure on common water resources.



Jamalpur District, Bangladesh. A woman uses a manual pump to collect drinking freshwater.

For instance, tanks and ponds have been filled with concrete for the development of housing, malls, etc. affecting drainage channels and leading to waterlogging during flash floods. Marginalised women in marginalised or fragile environments prone to climate uncertainty are more vulnerable, as are women in conflict prone areas and refugee camps.

How does water and sanitation scarcity affect women and young girls’ life?

Typically, girls in South Asia and in many regions of Africa spend more time fetching water and doing other domestic chores compared to their brothers. As girls reach puberty and start menstruation, they are often pulled out of school, particularly if there are no sanitation facilities. No doubt these norms are being challenged and many organizations such as WaterAid and its partners have done a lot of awareness raising on Menstrual Hygiene matters in India. Taboos are being broken and low-cost sanitary napkins are being made available to young women.

How to remedy water scarcity and quality issues including social equity and gender justice?

Keeping social equity and gender justice as guiding principles in the development of policies and plans whether at the local, national or global level is critical. Good planning needs to be supported by strong analysis based on gender and socio-economically disaggregated data, the use of practical participatory tools, the development of gender-sensitive indicators for monitoring and evaluation, and not least, the equal participation of women. Sadly, both the water and climate sectors are largely gender blind, though they pay adequate lip service to the need to address women and gender concerns. Policies have been created to have women participating in water management, but it needs also capacity buildings and bottom up approaches.

A lot can also be done locally – small actions that build social capital or support autonomous adaptation efforts are great, and likely to be more sustainable in the long term.

I don't really think that the situation has fundamentally changed in the last decades. Terms like "gender", "equity", "inclusion" are still very much on the margins of our discourse on water.

What could change the gender roles over water?

Gender is dynamic and we are already seeing that a lot of roles are changing as men assume more responsibility for household work and as women are engaged in collective action and decision-making both at the household and community level. Empowering women requires that they can first, freely access education (at a minimum, complete school and if possible a graduate degree or professional or skill-based qualification). Secondly, women require assets in their names, whether it is land or a house or a well. Land reforms in India have played a role in facilitating joint ownership and encouraging women to own a field of their own, or lease land collectively. And access to land typically determines access to water for agriculture.

Thirdly, capacity building on the technical and financial aspects of managing local water infrastructure is equally important.

There are examples of women being trained as handpump mechanics, masons or water pump operators, but these are few and far between.

200
million hours
are lost every day
by women and girls
spend collecting water

Source: Unicef

Why are women's land rights important to build water security?

Women and men have differential roles, rights and responsibilities in relation to water – their access to water for irrigation



*Bukoba, Tanzania.
Every day, Mariam
Abkaraki fetches
water one kilometre
away from home.*

is often determined by land ownership, which restricts women's participation in community water user associations where decisions about crops and water rotations are taken. Male out-migration, seasonal or otherwise, puts a larger burden on women to manage homes and fields in the absence of state recognition of their role as farmers – bypassed by agricultural extension workers as they are not recorded as heads of households. But migration can also be seen as an adaptive strategy since remittances can be used to enhance household water security – build water storage and harvest rainwater in drought prone areas, or build a toilet or a flat-roof (for food storage) in flood prone areas. In India, there have been reforms in public policy to accord greater land rights to women, whether as sole holders or joint, and several networks have been negotiating with the State to ensure that policy is implemented. But if there is no water, land cannot be cultivated, beyond the one or two rain-fed crops. Unfortunately, work on land rights has not always extended to water rights.

How giving better access to water can help empowering women?

Access to water for domestic purposes closer to her home can save women the time and energy spent in collecting water, even though it does not necessarily question gender roles: women continue to fetch water, and make even more frequent trips as household water demand increases. Time saved can be used for income-generating opportunities. For example, the Self-Employed Women's Association's (Indian NGO) Water and Work campaign was built on this connection with members organizing around the development of local water resources that they could manage.

Last year, you launched the online Living Waters Museum. Why is it important to promote water heritage?

A global network of water museums,

supported by Unesco, was launched in Venice in May 2017. I have been working in the water field for 30 years and I am very interested in the relationship between art, culture and water. My dream was to have a water museum in India.

We have started this virtual museum¹ first with the idea to engage young people to learn about their water history and water heritage. Water is so much a part of our life that we take it for granted. Young people must understand that water just doesn't come out of a tap. People used to revere water. Poems, stories, values, ethics: there is so much about water in all cultures.

“As girls reach puberty and start menstruation, they are often pulled out of school, particularly if there are no sanitation facilities”

The aim is not to fossilize history. Water is a connector across different faiths and communities. Much of our so-called "old" water infrastructures have withstood time and are still used (step wells, tanks, karez, etc.). Through digital narratives, we want to show how people have used and managed water in the past and how these water systems have been adapted through times. Through this virtual museum, we want to demonstrate the importance of interdisciplinarity and, collaboration between artists, scientists, engineers, water professionals... Water is a flow resource, and more importantly, a shared resource. We need to think about water in a systemic and integrated manner. •

¹ www.livingwatersmuseum.org

Latin America: Adaptation to climate change and wastewater treatment

The 2018 World Water Forum is being held in Brazil. It is the opportunity to take stock of issues related to water and sanitation in Latin America. Maurice Bernard, AFD Director in Bogotá for the Andean area (Colombia, Ecuador, Peru and Bolivia), gives an overview of the situation.



PAR

MAURICE BERNARD

Director for the Andean area for the Agence française de développement in Bogotá (Colombia)

Overall, Latin America does not lack water and its population has access to basic water and sanitation services. Indeed, the continent provides an almost universal access to drinking water. However, the continent is severely lagging behind in terms of wastewater treatment compared to other parts of the world. This is particularly problematic due to the fact that 75% of Latin America's population is urban and that the



continent is home to a substantial proportion of global biodiversity: the lack of wastewater treatment in urban centres has an impact on the receiving environments of this water. Latin America is also particularly vulnerable to climate change due to the increase in periods of rainfall, which cause floods. The El Niño and La Niña climate phenomena caused by variations in temperature and currents in the Pacific Ocean exacerbate droughts in certain countries and increase rainfall in others.

Besides this overall review, situations vary enormously from one Latin American country to another, as is also the case within countries. For example, Colombia constitutes a huge water reservoir.

There is good access to the service overall, but it remains insufficient in rural areas, while certain desert regions in the country are water-stressed. The quantity of water in the country's Amazon region does not stop the resource from being scarce in the Guajira desert. In other words, overall diagnostics are not representative of local situations.

Unequal access to water also persists between rural and urban areas in all countries, from Mexico to Argentina. Chile

“Climate phenomena [...] exacerbate droughts in certain countries and increase rainfall in others”



is the only exception on the continent. This country is also a specific case in many respects, as access to water resources is privatized and its level of development is similar to a European country. In addition to urban population pressure and pressure from increasing water demand, access to water resources

exacerbates tensions on the continent, particularly in regions where mining activities, which are major water consumers, are conducted alongside native populations who claim their right to water. These tensions are also set to increase due to climate change and growing demand. •

AFD IN LATIN AMERICA



11 countries of intervention



20% of 2016 activity



€6.8 billion committed from 2009 to 2016

Fortaleza, Brazil. Due to lack of drainage infrastructure, the city is susceptible to flooding, a twist of irony in a semi-arid area.

SANITATION

Why do toilets need to be reinvented?

AN INTERVIEW WITH



DOULAYE KONÉ

Senior Program Officer, WASH Program, Bill and Melinda Gates Foundation

The Bill and Melinda Gates Foundation is one of the largest philanthropic organizations in the USA.

It develops a pragmatic approach to the fight against infectious diseases by advocating for the "reinvention" of toilets. In addition to its financial support for the search for innovative solutions, the Foundation campaigns for a non-collective, on-site and profitable sanitation model, without sewers. What are the alternatives to the Western model of toilets? Explanations by Doulaye Koné.

What is the share of water and sanitation in the activities of the Gates Foundation?

In 2016, the water and sanitation sector accounted for US 100 million dollars of activities, i.e. 5% of our Global Development Program. It should be pointed out that we do not have the same vocation as donors: we do not finance infrastructure.

Our role is to innovate in areas that can subsequently facilitate the implementation of programs on a very large scale, which can be led by other development actors. We seek to create pathways towards new solutions, by reducing their risks.

Why is sanitation a priority for you?

I myself grew up in Côte d'Ivoire before studying sanitary engineering abroad. It is difficult to remain indifferent when you come from communities where children die from easily preventable diseases. According to the UN, 1 billion human beings on the planet still need to relieve themselves in the open air. It is appalling!

There are huge consequences in terms of child mortality: between 500,000 and 800,000 children under the age of five

die every year. On the economic front, India has calculated the losses caused by this situation at 5% of its annual GDP, i.e. US 100 billion dollars a year. When we travel across developing countries, we see that most people use non-collective sanitation solutions, particularly latrines with septic tanks. Yet developers often focus their attention on collective sanitation, the model which prevails in developed countries.

Why should this model not necessarily be followed?

There cannot be a one-size-fits-all solution. A flushing system with a sewer, treatment and discharge into the natural environment is very expensive! Furthermore, we can question the quantities of energy used to supply households with drinking water and subsequently purify it. We should also bear in mind that safe drinking water partly goes into toilets! The energy balance of the cycle of water used for sanitation in urban areas may seem aberrant.

We cannot ask all countries to replicate this model, which requires substantial infrastructure and financial resources. Various alternatives can provide this same quality of service for all. It is for this reason that the Bill and Melinda Gates Foundation finances the development of technologies which allow feces to be recycled into energy, while offering the same comfort as a flush toilet. We are doing this in the context of the call for the reinvention of toilets, which we launched in 2011.

When it is not possible to have a flush toilet with a seat, latrines are often available, no comfort and no safety, insects and septic tanks we do not

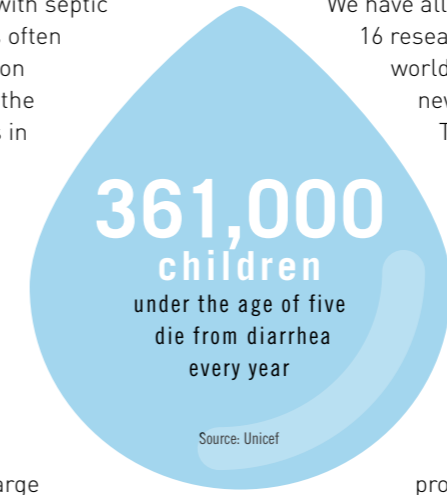
know what to do with. There is not a lot of choice. Consequently, we try to get industry to come up with new technological solutions. Major groups team up to try to define the characteristics of these toilets and turn them into international references.

We have allocated grants to 16 researchers around the world for them to invent new generation toilets.

The objectives? Recycle feces without a connection to water or electricity networks for a cost of less than 5 US cents per user per day. In 2013, we invested US 5 million dollars in China for this research program. We also work in India, in partnership with the Ministry of Science and Technology.

What projects do you support in South East Asia and Sub-Saharan Africa?

In both these regions, we work using a more traditional approach with the other development actors to improve what already exists, i.e. latrines which require a quality service with sewage vehicles and treatment. This is the approach which prevails in Senegal, South Africa and Uganda. In these countries, we work with municipalities and water companies to remove feces, transport it and treat it. It is a chain which involves both the



Objective of the toilets of tomorrow: recycle feces without water or electricity and for less than 5 US cents per user per day.

Abidjan, Côte d'Ivoire. Children visit the new toilets provided by the United Nations.



“Sanitation is not a loss-making investment”

public sector and private operators. This model works. Anyone who enters this market will bring added value. We want to demonstrate that sanitation is not a loss-making investment!

The work achieved by the Senegal National Office for Sanitation is an example of success. The pilot project was set up in 2014, with 8 billion FCFA of support from the Foundation. The aim was to prove that non-collective sanitation can be organized as a market service without the use of new technologies. The program started in the deprived neighbourhoods of Pikine and Guédiawaye, two of the most populous districts in the outer suburbs of Dakar. The toilets there were emptied, as they posed a health risk and a problem of public hygiene. The service providers have taken over from the public service. They empty the

septic tanks in these neighbourhoods, then transport the sludge to treatment plants, which have been managed by private industry since 2012 and are profitable. The cost of services has fallen and commercial banks are beginning to lend to the private sector for the development of these activities. An agreement has been signed with AFD to support this process on a larger scale in Senegal.

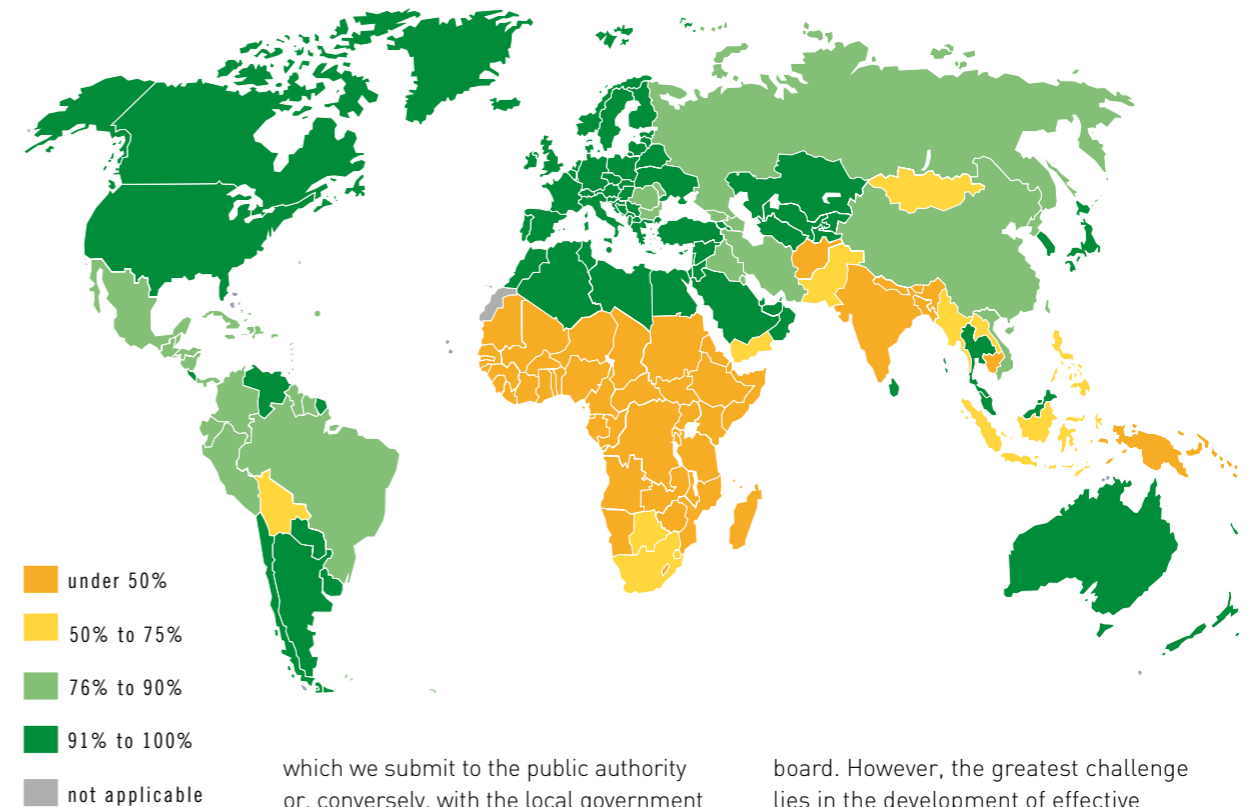
In India, the Prime Minister has made sanitation a major national priority. Our role there is to support the administration and sector stakeholders at various levels. With the federal government, we are working to ensure that public policies are well formulated, so that the federal States develop well-targeted policies, which is the case in about twenty of them. In Tamil Nadu and Andhra Pradesh, States where we are present, we are working with the private sector to come up with solutions



Nairobi, Kenya. A man comes out of public showers in the Kibera slum.

PROPORTION OF POPULATION USING AT LEAST BASIC SANITATION SERVICES

in 2015



Source : Progress on drinking water, sanitation and hygiene: 2017 update and SDG baselines, JMP Washdata.

which we submit to the public authority or, conversely, with the local government to structure service provision and financing requests. South Africa also sets an example with a national policy adopted in 2016, which recognizes non-collective sanitation as a priority sector for investments.

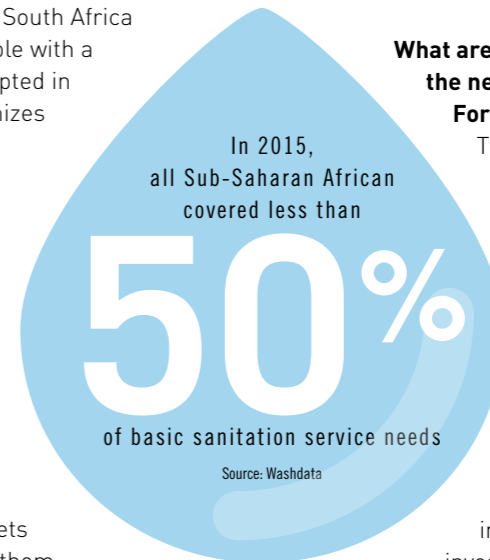
Why is “building a demand for sanitation” one of your priorities?

People do not always use the toilets which are built for them by external partners for a whole host of reasons. Sometimes, for cultural reasons, people do not feel comfortable in a confined space, or the technologies installed are not suited to customs. We need to propose products which communities are likely to take on

board. However, the greatest challenge lies in the development of effective public policies.

What are you expecting from the next World Water Forum?

The World Water Forum needs to raise the awareness of experts and lead to the recognition that on-site sanitation is a priority. Governments and NGOs need to commit to supporting it, including in terms of investments. The entire Western sanitation system is based on the idea that water is renewed. Yet water is becoming an economic resource which is not always available. From this perspective, on-site sanitation provides a good opportunity to save water and builds a link with climate change. •



PRIVATE SECTOR

When innovation and private enterprise facilitate access to drinking water

AN INTERVIEW WITH



ASK WAR HILONGA

Tanzanian engineer, inventor of a water filter, which earned him the 2015 Africa Prize for Innovation from the British Royal Academy of Engineering

How to facilitate access to drinking water when public authorities are unable to provide it? This is the question Askwar Hilonga, a Tanzanian engineer, asked himself before developing a water filter able to filter 99.999% of micro-organisms and chemical products.

His experience also proves that launch a start-up in the water sector in Africa, have a significant social impact and become profitable can all be done. His company Gongali Model, based in Arusha in Tanzania, markets his patented system in East Africa.

What were the reasons behind your innovation?

According to Unicef, 46% of the population of Tanzania does not have access to an improved drinking water source. Health problems (diarrhea, typhoid, amoebas), and especially child mortality related to this problem in rural areas, prompted me to conduct research with the aim of having a tangible impact on the health of my fellow citizens.

My objective is to reach as many people as possible. I want to be a millionaire, not in dollars, but in the number of people with access to drinking water thanks to me!

It is for this reason that we decided, in addition to the filters, to rent, sell or install small water filtration stations in our outlets to serve all those who cannot afford to buy filters for their homes. Consequently, we filter the water for them so that they can buy it at a very low cost.

What stage have you reached in the development of your project?

The pilot phase has been completed. Our products are now available on the market in Arusha, my hometown, in northern Tanzania, near the Kilimanjaro and Serengeti National Park. So, they are now available to the city's 700,000 residents.

We sell our water filters and filtration stations through our own retail network.

We currently manage 30 kiosks in the city and hope to have 100 by April 2018, which will extend our services in the region and serve rural areas. In addition, 90 outlets rent filters from us and can distribute cheap clean water.

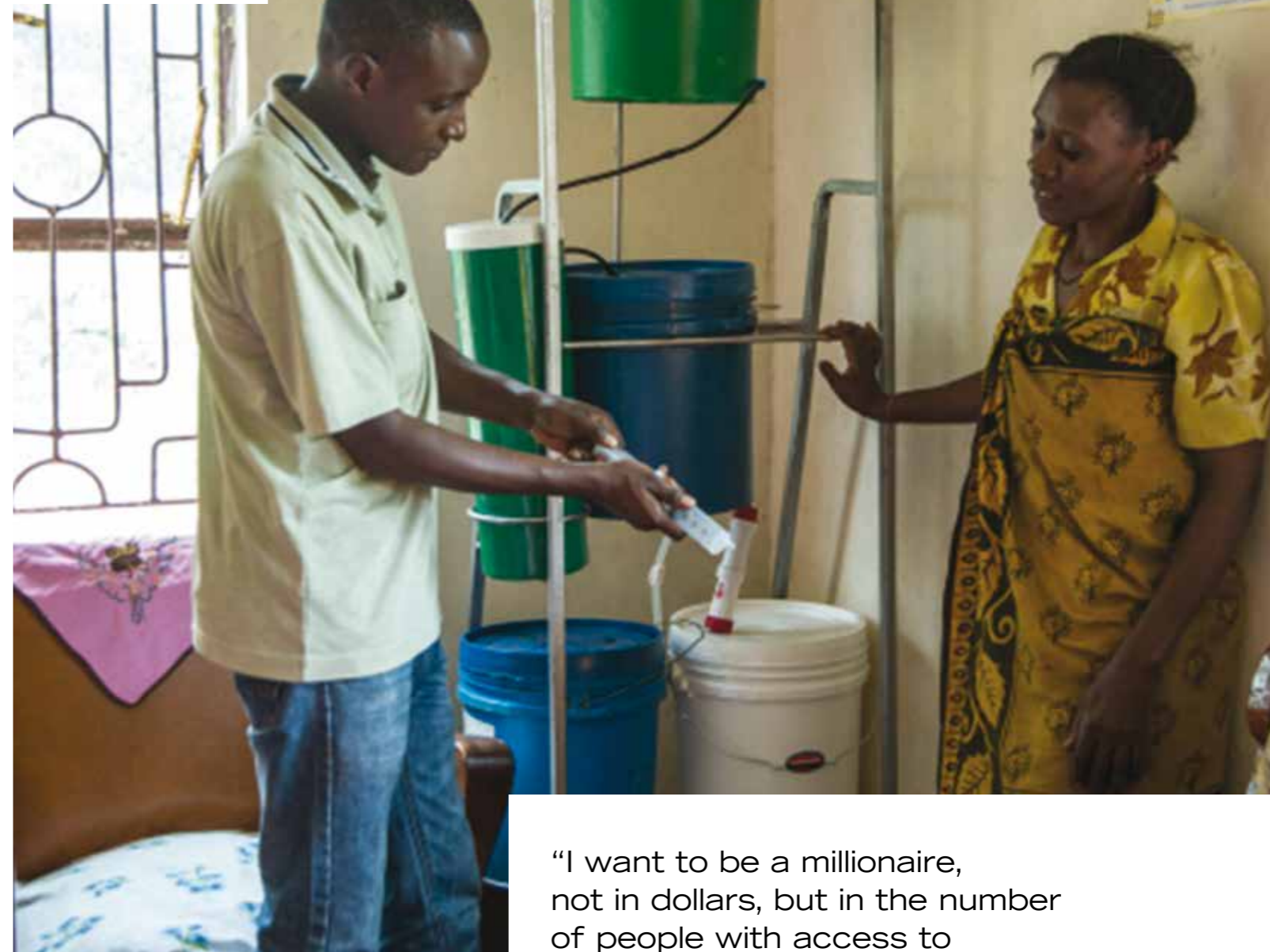
Our filtration stations are also sold to companies,

schools, universities, clinics and individuals, with a filter recharge system. A litre of drinking water can consequently be bought for the price of 200 Tanzanian shillings, the equivalent of

46%
of Tanzania's population does not have access to an improved drinking water source.

Source: Unicef

Arusha, Tanzania. Askwar Hilonga installs a filter system for a family.



“I want to be a millionaire, not in dollars, but in the number of people with access to drinking water thanks to me!”

10 US cents, i.e. five times cheaper than the market price.

Shouldn't this mission be up to the public service?

The Tanzanian Government has a lot of other tremendous responsibilities, particularly in the field of education and infrastructure. Tanzania is a developing country and the authorities are doing their utmost to simply improve access to water. Developing access to drinking water is even more difficult to achieve. Meanwhile, the authorities give me their full support, in particular by providing

me with all the authorizations required to operate.

Could your innovation be replicated on a larger scale by the public authorities?

It is possible, but they first ask me to prove that the system operates efficiently. So, I carefully record the traces of our impacts, backed up by statistics, to show that we are doing pioneering work.

What is the sale price for the filters and is your company profitable?

The smallest model of the filter costs 150 dollars. It has the shape of a tube and can treat 10 litres of water an hour. Its components need to be replaced after 800 filtered litres, which is the average water use of a household per quarter, meaning it costs about 5 dollars every three months. The largest filter costs 240 dollars and has a treatment capacity of 20 litres an hour.

Gongali Model, our company, is now profitable. It currently generates a turnover of about 3,000 dollars a month: 2,000 dollars come from sales of water which is already filtered and 1,000 from sales of filters and filtration stations. We have 12 permanent staff at the headquarters and three volunteers. Salaries are not very high in Tanzania, so we can also pay kiosk managers a salary of 50 dollars a month.

Do you still benefit from grants or external support?

After completing my PhD, in 2010, I worked for four years on the first prototype of the filter in the laboratory of the University of Arusha. An 8,000 dollar grant from the university really helped me, as did the 33,000 euros from the Africa Prize for Engineering Innovation from the British Royal Academy of Engineering, which I won in 2015. Thanks to this award, I was also able to benefit from six months of business training, which really made a difference: I learned how to develop a business plan and think about how to market my product, as well as the patent and the protection of my intellectual property. As for the money, it was reinvested in the company I set up with my wife in 2014. The company is now well on track.

We still benefit from support from the Human Development Innovation Fund, which comes under British cooperation, but we are gearing up to become completely independent and no longer rely on aid.



Arusha, Tanzania.
A filter set up in a kiosk allows to sell drinking water at an affordable price.

What are the development projects of Gongali Model?

We have opened 10 outlets in Kenya and we receive a lot of requests from various African countries, particularly Uganda and Ethiopia. However, we want to stabilize our economic model before entering foreign markets. We are currently testing the franchise model and are setting up a pilot kiosk, which can serve as a model of viable and profitable management.

We are also considering opening our capital up to investors in order to lower the cost of the filter and be able to sell on a larger scale. But we want to be sure that we really share the same objectives and

Thanks to Gongali Model filters, a litre of water costs
10 US cents, which is five times cheaper than market cost

the same values. So, we do not rush into anything.

Have you drawn on other innovations in this field?

Slow sand filtration has been known for centuries, along with membrane water filtration technology. Our filters combine sand and nanotechnologies. They are consequently capable of removing pesticide residues, sodium fluoride, heavy metals, such as copper, and chemical pollutants from water. To put it simply, the nanofilter combines a slow sand filtration system and filtration nanocomponents, made from silicone and silver.

I have improved and combined these technologies so that the filter can treat various sources of contamination in the water and be adapted to the place it is installed. Indeed, the sources of pollution are not always the same. Water

“We need to focus on the 90% of human beings who struggle on a daily basis in poor countries”

in mining regions in Zambia is mostly contaminated by mercury or copper, whereas in the Rift Valley in Ethiopia, it is mainly polluted by sodium fluoride, which is very bad for teeth and bones. Each time, we have to find the right way to decontaminate the water, which is not polluted in the same manner everywhere, neither by the same bacteria, nor by the same chemical components.

Is there a network of African innovators in the water sector?

There are, of course, other innovators, who are to be found in networks such as the Alliance for Global Water Adaptation. Innovators like me are also invited by the Water Show Africa, which is held in South Africa every year, and NGOs like Water Aid are interested in our activities. It is not really a network of innovators, but it allows us to meet and have exchanges.

What are you expecting from the World Water Forum?

I would like the partners who will be gathering there to focus on the 90% of human beings who struggle on a daily basis in Sub-Saharan Africa, in India, and in the other poor countries. The international community should be more on the offensive to develop a provision capable of meeting the huge future demand. I often hear that the Third World War will be triggered by a problem of access to water. So, we should anticipate this. We need to be ambitious and target entire communities in order to have a bigger impact! •

COMMONS

Provide a quality, sustainable and affordable service to all

The 2018 World Water Forum serves as a reminder of the pressing need to implement the Sustainable Development Goal dedicated to access to drinking water and sanitation, and to sustainable resources management. Céline Gilquin, Head of AFD's Water and Sanitation Division, explains.

BY



CÉLINE GILQUIN

Head of AFD's Water and Sanitation Division

The 2018 World Water Forum is the first to be held since the adoption of the Sustainable Development Goals (SDGs) in 2015. SDG 6 is clear: "Ensure availability and sustainable management of water and sanitation for all". Yet we know that 2.1 billion people still do not benefit from a drinking water service at home and that 4.5 billion people are without sanitation services. The water issue is intimately linked to climate challenges. It has an impact as much on health as on gender equality and the environment. Water is the major challenge of the 21st century. To address this challenge, in 2017, AFD allowed over 10 million people to benefit from water and sanitation services, representing some 1.2 billion euros of financing. We also promote sustainable and concerted water resources management, which involves an economic use of water in agriculture and industry, the activities which consume the most water, but also saving drinking water in domestic uses. In addition, AFD finances and supports the development of wastewater treatment and reuse systems. Water governance is also another major challenge. In addition to the lack of

water resources, the absence of good governance is the main cause of the lack of access to water and sanitation services. There are consequently high rates of access to water in areas where there is a major shortage of water, whereas areas where there are abundant water resources have very low rates of access and there is a poor quality of service. The implementation of a clear institutional framework, regulation and capacity building for actors are core concerns for AFD. It is for this reason that 50% of our financing comprises a component to improve governance.

"Water is the major challenge of the 21st century"

A few months ahead of the meeting to monitor SDG 6 organized by the United Nations in New York in July 2018, the World Water Forum must say loud and clear that there is a pressing need to scale up efforts to fast track the implementation of this global agenda. •

THE EXPERTS

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CATARINA DE ALBUQUERQUE

Executive Chair of the global partnership Sanitation and Water for All, she was the first UN Special Rapporteur on the Human Right to Water and Sanitation from 2008 to 2014. She won the 2016 Global Water Award for her exceptional work as the driving force behind the recognition of the fundamental human right to water and sanitation.



XANTHEA LIMBERG

Cape Town Councillor since 2011, she chairs the Mayoral Committee overseeing Informal Settlements, Water & Waste Services, and Energy. She also serves on different committees in charge of the development of effective supply of public services for the 4 million Capetonians.



JEAN LAPEGUE

Senior Advisor water-sanitation-hygiene (WASH) in Action contre la faim since 2008, he animates the team which brings water and sanitation services to 3 million people in 20 countries every year. He also represents the French Water Partnership on the World Water Council Board since 2015.



FADI GEORGES COMAIR

Water diplomat and international negotiator specialized in the Middle East region, he is President of the Medurable association, Honorary President of the Mediterranean Network of Basin Organizations, and a member of the Unesco Commission on Water and Human Establishments.



STEPHEN MCCAFFREY

Distinguished Professor of Law at the McGeorge School of Law (Uni. of the Pacific) and 2017 Laureate of the Stockholm Water Prize, the former International Law Commission's Special Rapporteur on international watercourses is now member of the Implementation Committee of the United Nations Economic Commission for Europe Water Convention.



SARA AHMED

Committed for 30 years in applied research on water and social equity, she manages research programs on water, food security and climate change in Asia with IDRC. She is on the board of WaterAid India and is developing a digital museum on water heritage in India which is part of the evolving Unesco supported Global Network of Water Museums.



MAURICE BERNARD

Director for regional action of AFD in the Andean area, he has more than 30 years of expertise in environment and sustainable development public policies as well as in conceiving, rehabilitating and exploiting infrastructures, particularly in the water and sanitation fields. Previously, he was Head of AFD's Water and Sanitation Division and of AFD's Sustainable Development Direction.



DOULAYE KONÉ

Doctor in sanitary and environmental engineering, he is Senior Program Officer on the Water, Sanitation & Hygiene Program at the Bill & Melinda Gates Foundation, and his portfolio focuses on innovation and its associated business models for sustainable sanitation service delivery in the framework of the to "Reinvent the Toilet" Program.



ASKWAR HILONGA

Tanzanian nanotechnology engineer, in 2015, he invented a filter which removes micro-organisms and chemical products from water and earned him the Africa Prize for Innovation from the British Royal Academy of Engineering. His company, Gongali Model, markets it in Tanzania and Kenya. His project is supported by Arusha University and the British cooperation.



CÉLINE GILQUIN

Agricultural engineer and engineer of rural, water and forestry engineering, she is Head of AFD's Water and Sanitation Division. Previously, she was in charge of monitoring AFD's projects in the water and sanitation fields in sub-Saharan Africa South Asia and in the French Overseas Territories.

iDÉES POUR LE DÉVELOPPEMENT

A blog coordinated by the Agence Française de Développement

What is ID4D?

A platform for debate on development

The ID4D blog has one objective:
promote an open debate of ideas on development.

The blog is intended for all those, from both the North and South, who are interested in development issues: donors, NGOs, ministries, local authorities, researchers, private actors, students, citizens.

A cycle of conferences

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